

# MEDICAL PROCEEDINGS

## MEDIESE BYDRAES

A South African Journal for the  
Advancement of Medical Science

'n Suid-Afrikaanse Tydskrif vir die  
Bevordering van die Geneeskunde

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Terramycin in the Treatment of Tropical Diseases

Preparations and Appliances · Preparate en Toestelle

Notes and News · Berigte · In Memoriam · Reviews of Books

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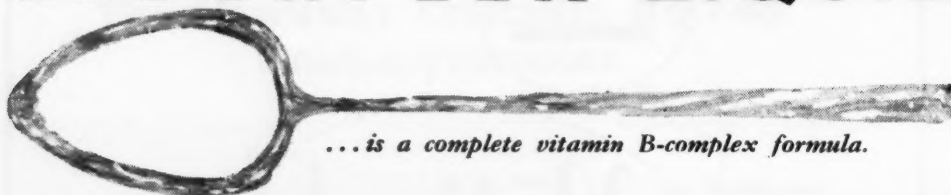
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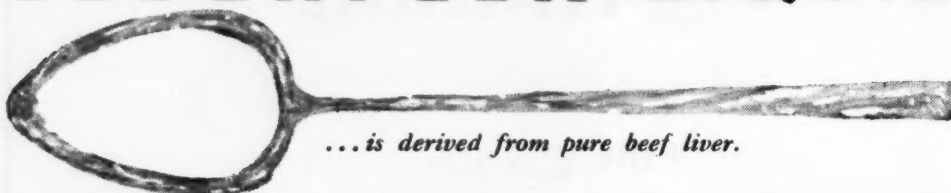
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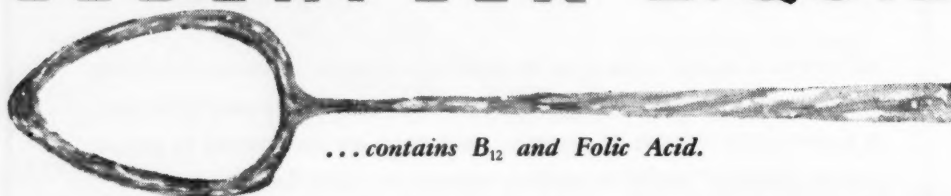
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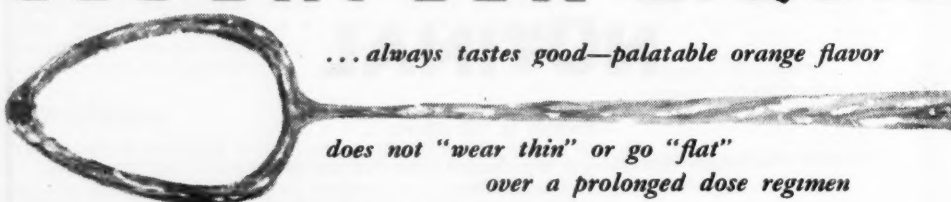
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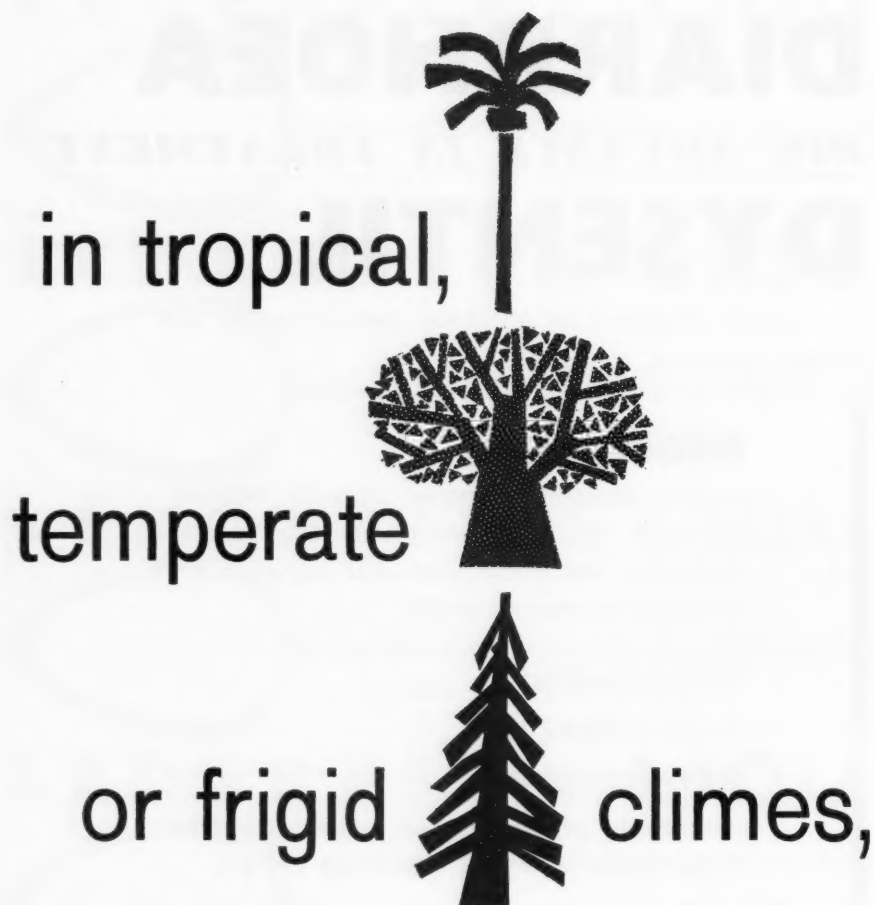
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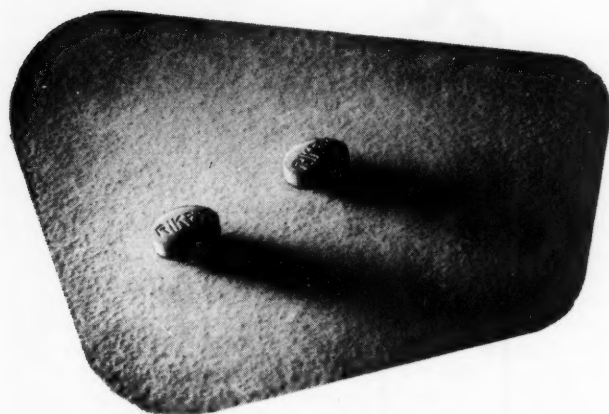
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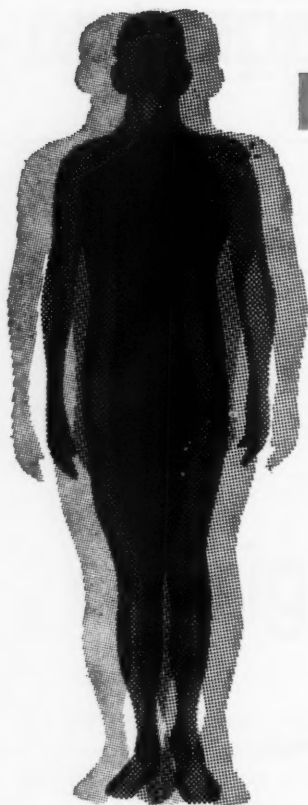
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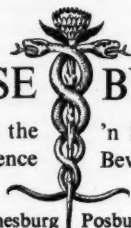
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Vol. 2

24 November 1956

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### EDITORIAL · REDAKSIONEEL

#### THE CHANGING FACE OF MEDICAL PRACTICE IN SOUTH AFRICA

#### DIE VERANDERENDE VOORKOMS VAN DIE MEDIESE PRAKTYK IN SUID- AFRIKA

'n . . . punt van belang is dat die klem deesdae op die belangrikheid en waarde van die familiedokter val. Dit is verblydend en ek k.n dit nie sterk genoeg verwelkom nie. *Hulle is die enigste grondslag waarop 'n doeltreffende gesondheidsdiens gebou kan word* en omdat 'n gesonde mediese fondsstelsel die familiedokter weer in sy regte perspektief plaas is ek so begerig dat die hele aangeleentheid ondersoek moet word.—Dr. Carel de Wet, L.V., in die loop van 'n toespraak gelewer in die Volksraad te Kaapstad op 16 Mei 1956.

Elsewhere in this issue Dr. Carel de Wet, M.P., discusses one of the most important issues which confronts the medical profession to-day. The increasing role of Aid Societies of one type or another has demonstrated their growing need and importance in the pattern of contemporary medical practice.

It is, of course, unlikely that Dr. de Wet has not trod on some sensitive corns in the course of his extremely thorough survey, but the ventilation of this important issue is desirable and timely.

It is a truism that most patients need some kind of financial assistance to meet the heavy cost of medical care. Patients may seek this aid through some or other form of insurance and the more fortunate ones are assisted by generous contributions from employers. A disturbing feature of these schemes, however, has been the considerable extent to which the medical profession has been expected to subsidise the professional services its practitioners give. This, of course, creates an inherently inequitable situation for the doctor and one which finds no parallel in the services sought by the public from other professional groups.

Elders in hierdie uitgawe bespreek dr. Carel de Wet, L.V., een van die belangrikste probleme waaroor die mediese profesie vandag te staan gekom het. Die steeds groter rol wat deur hulpverenigings van die een of ander tipe gespeel word, toon aan hoe noodsaaklik en belangrik hulle by toeneming in die patroon van die moderne mediese praktyk word.

In die loop van sy buitengewoon deeglike oorsig is dit hoogs waarskynlik dat dr. De Wet op 'n paar gevoelige tone getrap het, maar die bespreking van hierdie belangrike probleem is wenslik, en kom presies op die regte tyd.

Dit is 'n onomstootlike waarheid dat die meeste pasiënte die een of ander soort finansiële hulp nodig het om die aansienlike koste van mediese versorging te bestry. Pasiënte kan hierdie hulp verkry deur die een of ander vorm van versekering, en die meer gelukkiges word gehelp deur milde bydraes van hul werkgevers. 'n Verontrustende kenmerk van hierdie skemas is egter die aansienlike mate waarin die mediese profesie verwag word om die professionele dienste wat deur sy praktisyns verleen word, te subsidieer. Dit skep natuurlik 'n inherent onbillike posisie vir die dokter—

Co-ordinated and well-supported schemes of insurance against illness will undoubtedly find favour with patient and doctor alike, especially as intelligent planning can arrange a form of assistance for the patient which will allow him to retain the fundamental right of a free choice of doctor—a principle essential in the interests of the public as well as the profession, as Dr. de Wet has so cogently demonstrated.

It may well be that the most suitable body to organize some kind of insurance or assistance scheme on a national scale is the medical profession itself. It would be absurd to discard the lessons to be learned from the numerous insurance schemes sponsored by the profession in the U.S.A. and in Canada, e.g. Blue Shield, Physicians Inc., etc.

The increase in the cost of living in all walks of life shows no sign of abating and the need to face the problem and work out a solution is one which concerns us here and now.

Dr. de Wet's survey will, we hope, stimulate controversy and debate and give rise to planned action which will serve to protect the standards of medical practice in this country, thus providing the greatest number of patients with the best possible medical service.

'n posisie wat geen gelyke het in die dienste wat die publiek van ander professionele groepe verlang nie.

Gekoördineerde en deeglike gesteunde skemas vir versekering teen siekte sal sonder die minste twyfel byval by sowel die pasiënt as die dokter vind, veral aangesien intelligente beplanning op 'n vorm van hulpverlening kan uitloop waar die pasiënt sy fundamentele reg sal behou om sy dokter vryelik te kies—'n beginsel wat noodsaaklik is in die belang van die publiek sowel as die profesie, soos dr. De Wet heeltemal tereg daarop wys.

Daar kan bes moontlik aangevoer word dat die geskikste liggaam om die een of ander versekerings- of hulpverleningskema op 'n landswyse grondslag te organiseer, die mediese profesie self is. As ons die lesse wat geleer kan word aan die hand van die ondervinding van die talle versekeringskemas wat onder beskerming van die profesie in die Verenigde State en Kanada staan, soos Blue Shield, Physicians Inc., ens. eenvoudig veronagsaam, maak ons ons aan 'n onvergeeflike vergissing skuldig.

Die styging in die koste van lewensonderhoud in alle stande van die lewe toon geen die geringste tekens van afname nie. Derhalwe is dit noodsaaklik om die probleem vierkantig onder die oë te sien en 'n oplossing te probeer vind, want dit is iets wat elkeen van ons raak—hier en nou.

Ons hoop dat dr. De Wet se oorsig bespreking en meningsuitsings sal stimuleer, en aanleiding sal gee tot planmatige optrede wat die standaard van die mediese praktyk in hierdie land sal beskerm en die groots moontlike aantal pasiënte van die bes moontlike mediese diens sal voorsien.

### IN MEMORIAM

ATTILIO EMILIO DREOSTI, M.B., CH.B., F.R.C.S. (Eng.)

With the untimely death at the age of 44 years of the late Mr. A. E. Dreosti in Rome on Wednesday, 27 June 1956, the medical world lost one of its most prominent and distinguished figures.

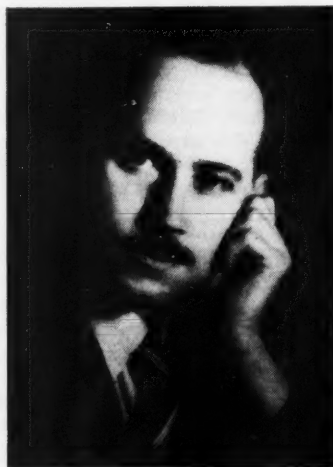
His short life is a record of service to humanity and to his honoured profession, but it is mainly for what he achieved and for the sacrifices he made in the interests of surgery, that we now pay him tribute.

Born at Pretoria in 1912, he matriculated at the Pretoria Boys High School to pass on to Pretoria University, whence he left for the University of Cape Town. He was a brilliant student and qualified for the degree of M.B., Ch.B., at that university in 1936. He was appointed House Surgeon to Professor Saint in Cape Town, after which he proceeded to England where he obtained the F.R.C.S. in 1938. On his return he was appointed to the staff of the Far East Rand Hospital for 18 months, and in 1941 joined Mr. J. A. Douglas, of Johannesburg, in private practice as surgeon. Simultaneously he was appointed to the staff of the General Hospital, where he later became Assistant Surgeon, a post he held up to the time of his death.

In 1942 he was appointed Consultant Surgeon to the Chamber of Mines Hospital, Surgeon to the S.A. Police and Consultant Surgeon to the Dental Hospital at the University of the Witwatersrand, as well as Lecturer in Surgery and Surgical Pathology.

Not only was he a surgeon of outstanding ability,

but he was also noted for his unceasing kindness and humanitarian feelings toward both patients and colleagues.



Mr. A. E. Dreosti



His outstanding practice extended to many parts of the Union, and his sudden death is the more tragic as he had just realized his highest ideals and was at the peak of a great surgical career.

His pursuit of perfecting various major surgical techniques took him on frequent trips abroad where he was particularly impressed by Professor Valdoni of the University of Rome.

In South Africa he was the pioneer of the Valdoni operation for gall stones impacted at the lower end of the common bile duct, and was well known for the pioneering of bilateral adrenalectomy.

What it meant to the general practitioner and surgeon alike, to have his advice and help at all times, only those who experienced it can know.

A very cultured colleague and much travelled, he possessed a wide knowledge of many and varied subjects, with an unfailing sense of duty and a remarkable sense of humour. This made him the man we knew as 'Dreo'. To have had the honour of being intimately associated with such a prominent figure accentuates the loss one feels of a friend, colleague and teacher.

Last but not least we wish to tender our deepest sympathy to his wife, Dr. M. Bennett and his dearest children, A. G. aged 10 years and Lydia, aged seven.

Jan H. de Kock.  
K. Jooste

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*Metreton* Nasal Spray has been introduced to complement *Metreton* tablets in the treatment of resistant allergies. Each c.c. of *Metreton* Nasal Spray contains 2 mg. (0.2%)

Metircortelone (prednisolone) acetate and 3 mg. (0.3%) Chlor-Trimeton (chlorpropyridamine) gluconate.

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**Administration and Dosage:** Once in each nostril every 3 or 4 hours. For the first 24 hours more frequent use may be required. When the symptoms are satisfactorily controlled, frequency of application may be reduced.

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**Aanduidings:** Akute of kroniese rinitis, allergiese rinitis, neuspolipe (sonder fibreuse veranderings) verbonde aan neus-allergie, bedwang van edeem en ontsteking by sinusitis of neus-keel-ontsteking.

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## NOTES AND NEWS • BERIGTE

Dr. Maurice Hurwitz, M.B., Ch.B. (Edin.), D.M.R.D. (R.C.P. & S. Eng.), formerly of the Diagnostic X-ray Department, Hammersmith Hospital (Postgraduate Medical School) London and the Pneumoconiosis Bureau, Johannesburg, has joined Drs. Loots, Osler and Esterhuizen in radiological practice at 101 Medical Centre, 209, Jeppe St., Johannesburg. (Telephone: 23-7144).

TADPOLE TREATMENT OF FERTILITY  
THE NEWER CONTRACEPTION

China, now Communist and therefore trying to be scientific, is developing an encouraging interest in birth-control. The defeat of superstition is obviously a tough job. Great interest has been aroused in Chekiang province by the statement of a 'traditional doctor' that eating a live tadpole is the one 'safe and reliable' method by which women may avoid conception and that it is 'without any reaction'. It seems that large numbers of women believe this advice and act upon it. Other statements by less traditional doctors throw doubts upon the claim that 'swallowing tadpoles to prevent conception has been experimented with by more than 110 persons and has been proved efficacious in more than ninety-five cases and only a few persons bore

children in five years'. Newspaper reports suggest that the experiments were not wholly scientific.

(From *The New Statesman and Nation*, 20 October 1956, p. 476.)

## ADRENOCORTICAL FUNCTION IN SCHIZOPHRENIA

The concentration of adrenal steroids (17-hydroxy-corticosteroids) in the peripheral blood of chronic schizophrenics was determined at 8 a.m.; after the intravenous administration of various amounts of ACTH or of a pyrogenic substance (Pirumen); and after the subcutaneous injection of regular insulin. These drugs were employed to assess adrenocortical and pituitary-adrenocortical responsivity. Similar studies were made upon a comparable group of normal subjects.

The adrenocortical and pituitary-adrenocortical reactivity of chronic schizophrenic and normal subjects was equivalent.

There was no evidence of any impairment of adrenocortical physiology in the chronic schizophrenic patient.

(From Bliss, E.L., Migeon, C. J., Branch, C. H. H. and Samuels, L. T. (1955): *Amer. J. Psychiat.*, **112**, 358.)

## MEDIESE DIENSTE

## DIE TOEKOMS VAN DIE PRAKTYK IN SUID-AFRIKA\*

CAREL DE WET, L.V., M.B., B.Ch.

*Vanderbylpark, Transvaal*

Mnr. die Speaker, 'n besondere groot gedeelte van die besprekings in hierdie debat het op 'n direkte of indirekte wyse gegaan oor die mees geskikte geleenthede en toestande wat van owerheidsweë geskep word om elke persoon in staat te stel om homself en sy huisgesin so goed as moontlik te versorg. 'n Baie belangrike deel in die versorging van 'n gesin was nog altyd, en is vandag nog die gesondheid van elke lid van die gesin.

In hierdie opsig het die regering 'n groot mate van verantwoordelikheid. Die ontdekking het geleer dat dit nie alleen wenslik is nie, maar ook noodsaaklik; en ons aanvaar dit so, dat die staat sekere pligte onderneem en finansier wat die volk se gesondheid betref. Hier dink 'n mens aan aansteeklike siektes soos byvoorbeeld toring, melaatsheid en so meer, geestesongesteldheid en die voorkoming van siekte—alles dinge wat die volk as 'n geheel raak. Aan die Provinsies is hoofsaaklik opge-

dra hospitalisasie, en aan die plaaslike owerhede die voorsiening van sekere kliniekdienste en ander pligte. Die pligte en funksies van al drie naamlik staat, Provinsie en plaaslike owerheid is meer of min van gebieds- of nasionale omvang, maar die verantwoordelikheid vir die daaglikse geneeskundige- en gesondheidsbehoefes van elkeen van ons, en van die huisgesin as 'n geheel, was egter nog altyd tot 'n baie groot mate aan die individu self, of aan die hoof van die huisgesin oorge-laar. En ek dink nie dit is te betwyfel nie dat die strewe en uitgangspunt nog altyd was dat die individu of die vader van die familie in staat gestel moet word om die versorging self te kan waarneem.

Die vraag is egter: Hoe moet dit gedoen word? Dit is 'n lewensbelangrike vraag omdat dit elke man en vrou en kind in die land raak, waarby u en ek nie uitgesluit is nie; en daarom wil ek dit graag met u bespreek. Nou mnr. die Speaker, laat ek net weereens beklemtoon dat ons die bespreking net bepaal by die alledaagse geneeskundige behoeftes—

\* 'n Toespraak gelewer in die Volksraad te Kaapstad op 16 Mei 1956.

die kind met mangelontsteking byvoorbeeld, iemand met 'n akute blindederf, iemand met 'n bloedvint of steentjie in die nierpyp of 'n kind met 'n kindersiekte soos byvoorbeeld skatlagenkoors, met ander woorde die gewone alledaagse geneeskundige behoeftes—sommige ernstig en andere van minder ernstige aard.

Daar is drie metodes wat gevolg kan word om hierdie dienste aan die publiek beskikbaar te stel.

Die eerste metode is deur middel van 'n Staatsmediesediens soos gevind word in ander lande, sommige met sukses, en ander met twyfelagtige resultate. Van wat ek gesien het van die Britse Staatsmediesediens is dit 'n bietjie vroeg om 'n definitiewe oordeel te vel, maar skyn dit tog of dit in die algemeen gesproke aanvaar word. In die Skandinawiese lande is dit ook bekroon met 'n groot mate van sukses. Maar wat my veral getref het, is dat juis in daardie land waar dit 'n sukses is dit aan my gesê is deur een van die intelligentste en praktiese mense wat ek ooit ontmoet het dat al is 'n stelsel nou ook met hoeveel sukses bekroon, en al werk dit nou ook hoe mooi, kan dit nooit netso toegepas word in 'n ander land nie, want dit mag 'n volslae mislukking wees omdat dit nie by daardie volk se aard en leefwyse aanpas nie. My beskouing, mnr. die Speaker, is dat 'n Staatsmediesediens nie by ons volk se aard en lewensopvatting aanpas nie.

Die Britse Staatsmediesediens is ingestel op 'n tydstop net na die oorlog toe die hele volk gewoon was aan jare van gebrek ly, opmekeer woon, van koepontstelsels, van beheer en van tou staan vir feitlik alles. Alles dinge wat meegehelp het dat die gewone man in baie opsigte dit aanvaar het dat hy tot 'n groot mate net 'n nommer geword het. Hy het gewoon geword om sy beurt af te wag en met min tevrede te wees. En myns insiens lê die mate van sukses van die Britse Staatsmediesediens tot 'n groot mate hierin opgesluit.

Maar mnr. die Speaker, omstandighede hier in Suid-Afrika is heeltemal anders. 'n Staatsmediesediens is vir Suid-Afrika ongeskik omdat dit nie aanpas by ons aard en gewoontes nie. Die gemiddelde Suid-Afrikaner is gewoon aan ruimte en vryhede wat meebring individualiteit, verantwoordelikheid en eie-bepaling van sy leefwyse, insluitende die keuse van wie hom sal besoek en behandel wanneer hy siek is. Dit, dink ek mnr. die Speaker, is 'n pragtige kenmerk wat behoue moet bly en uitgehou word en nie dalk vernietig word deur 'n sosialistiese stelsel soos 'n Staatsmediesediens nie.

Om hierdie rede, en al die ander ewels daaraan verbonde, asook die finansiële implikasies wat myns insiens ondraaglik sal word, is ek oortuig daarvan dat 'n Staatsmediesediens in Suid-Afrika uiters ongewens is.

Die tweede wyse daarop in die daaglikse geneeskundige behoeftes voorsien kan word is die gebruik van vroeër jare en vandag nog tot 'n kleinere mate naamlik private geneeshere is oor die hele land gevestig, die pasiënt ontbied die geneesheer van sy eie keuse, en betaal vir sy dienste, en dié wat nie kan betaal nie word gewoonlik kosteloos behandel. Nou ek dink nie een van ons wil sien dat hierdie vrye keuse ooit moet verdwyn nie, intendeel dit moet te alle tye behoue bly.

Nietemin is dit 'n feit dat Suid-Afrika in die afgelope 20 jaar spontaan in 'n rigting ontwikkel wat die derde wyse is waarop daar in die daaglikse geneeskundige behoeftes voorsien word—en dit is die ontstaan van siekefondse. Sommige mense noem dit mediese fondse. Dit is 'n spontane ontwikkeling en myns insiens 'n gesonde ontwikkeling.

Laat ons nou net duidelik verstaan wat 'n siekefonds of mediese fondse is. Dit werk so: 'n Groep mense dra weekliks of maandeliks by tot 'n gesamentlike fonds waaruit die koste in tyd van siekte gedeeltelik of in die geheel betaal word, met ander woorde dit bied sekuriteit wanneer daar groot uitgawes gedek moet word in tye van siekte. En dit is die rigting waarin Suid-Afrika beweeg. Eers het die groot handelsbanke daarmee begin en andere het gevolg. Daar is geen verpligte registrasie van siekefondse nie, maar die Mediese vereniging hou wel 'n vrywillige register aan wat 'n redelike aanduiding is van die snelle toename.

In 1944 was daar 12; in 1947, 42; in 1952, 85; in 1953, 123 en in 1955, 158, plus dié wat nie geregistreer is nie. Omdat daar nie verpligte registrasie is nie, is dit uiters moeilik om 'n juiste beraming te maak van die ledetal, maar volgens beskikbare inligting skyn dit asof daar 'n minimum van 750,000 tot een miljoen blankes reeds aan die een of ander fonds behoort. U sien dus dat hierdie spontane ontwikkeling reeds geweldige afmetings aanneem en dat dit jaar na jaar toeneem. En meneer die Speaker ek verwelkom dit want dit is 'n seën en noodsaaklikheid vir menige familie.

In hierdie ontwikkeling lê vir my die beste metode om aan ons mense geneeskundige en tandheelkundige versorging te bied mits dit op 'n gesonde grondslag berus. Dit bring mee

sekuriteit en beveiliging aan elkeen sonder dat verantwoordelikheid en individualiteit by pasiënt sowel as geneesheer verlore gaan. Dit is vir my die belangrikste ontwikkeling op die gebied van geneeskundige dienste in die afgelope 20 jaar, en daarom vra ek u aandag vir enkele oomblikke om hierdie ontwikkeling van nader te beskou. Daar is 3 groepe mense in die land wat ons aan moet dink in hierdie verband.

Die eerste groep sluit in die behoefte persoon, die armalastige, die oues van dae wat gebrek ly en die pensioentrekker. Dit is volkome reg dat die Staat deur middel van distriksgeneeshere en die Provinsies deur allesluitende hospitaaldienste hierdie groep mense gratis versorg. Ek weet nie van een land ter wêreld wat meer vir hierdie groep mense doen as Suid-Afrika nie; en wat betref die platteland versorg ons ons plattelandse mense sonder enige twyfel beter as die meeste lande, en sekerlik netso goed as die beses. Engeland en Holland uitgesluit, omdat hulle lande is met klein grondgebied, het ek nie in enige ander land 'n dorp die grootte van dorpe soos byvoorbeeld Standerton, Kroonstad, Worcester, Vanderbijlpark of enige ander plattelandse dorp gesien met so 'n hospitaal as op enige van hierdie dorpe nie. Hierby is daar 'n distriksgeneesheer vir elke 20,000 van alle groepe en rasse van ons bevolking. Dit wat betref die mindergegoedes.

Die tweede groep is die baie ryk mense. Hulle kan vir hulself sorg en hulle bekommer my nie, maar in dié opsig wil ek net sê dat daar is vandag twyfelagtige rede vir enigiemand, hoe welaf hy ookal is om na die buiteland te gaan vir geneeskundige behandeling, intendeel, alles in ag nemende sou hy homself 'n onreg aandoen deur nie hier in Suid-Afrika behandeling te ondergaan nie. Ons sien daaglik koerantberigte om hierdie stelling te regverdig. Die gehalte van studente, geneeshere, tandartse en verpleegsters in Suid-Afrika is van die hoogste—en dit is nie alleen ons eie mening nie, maar wel van vooraanstaande medici in die buiteland. Ek dink dit is ten volle geregverdig. Die tyd is meer dan ryp om hierdie feit so sterk te beklemtoon dat die publiek dit besef. Dit in kort wat betref die armes en die rykes.

Die derde groep is die middelgroep—die man van gemiddelde inkomste—sê nou maar vanaf £500 tot £2,000—£2,400 per jaar. Dit sluit in die oorgrote meerderheid van die bevolking. Dit is die werksman, die klerk, die onderwyser en 'n groot gedeelte van profes-

sionele mense. Dit is ongetwyfeld die groep mense aan wie ons vandag baie ernstige aandag moet gee. In die ou dae was mediese dienste eenvoudig en minder duur. Die moderne geneeskunde is egter duur as gevolg van ongeëwenaarde ontwikkeling, duur apparaat en duur hulpmiddels. Al hoe meer mense het gewoonde geraak om die voordele van die Westerse Geneeskunde vir hulself te eis. Dit is reg so, ek verwelkom dit, maar in werklikheid kan hulle dit nie bekostig nie. Al die jare het die armes, en ook sommige gegoede mense gratis behandeling ontvang, en ek dink die volle eer en waardering kom die geneeshere hiervoor toe. Maar omstandighede het verander. Vandag is die breë massa aangewys op gratis mediese dienste.

Het u al daaraan gedink dat die man, neem nou maar byvoorbeeld die amptenaar of werksman van gemiddelde inkomste wat siekte in die huis het blootgestel is aan totale finansiële ondergang as gevolg van langdurige siekte. Dit is gebeurlik in die lewe van elkeen wat nie aan 'n siekefonds behoort nie, en vandaar dat siekefondse populêr geword het. Wanneer 'n mens aan hierdie mense dink en inagnemende die ontwikkelingsgang van die afgelope jare dan sien ek die verdere ontwikkeling soos volg: Elke persoon sal na gelang van die grootte van sy familie en sy inkomste bydra tot 'n fonds—soos bykans 'n miljoen mense vandag reeds doen. Die fooie wissel gewoonweg van 15s. tot £1 10s. en £2 per maand. Hierdie siekefondse sal verbonde wees aan elke groot werkgever, terwyl die kleiner werkgevers in 'n omgewing miskien sal saamspan om 'n gesamentlike fonds daar te stel, en soos dit reeds vandag die geval is aangevul deur een of meer waaraan enigiemand kan behoort wat nie deur 'n spesifieke werkkring gedek word nie. Daar is nie die minste twyfel dat dit in die praktyk gedoen kan word, en dat dit finansiële en andersins gesond kan funksioneer nie. Ook die staat erken en verwelkom siekefondse. Dink maar aan die spoorwagsiekefonds en ek dink dit is korrek dat die Regering twee mediese fondse van staatsamptenare subsidieer tot 'n maksimum van £100,000 per jaar.

Om begryplike redes wil ek nie hier enige by name noem nie, maar daar is talle van klein ondernemings, middelslag en baie groot ondernemings wat vir etlike jare reeds sulke siekefondse het en wat die toets van die tyd suksesvol deurstaan het.

In hierdie opsig kan ek nie nalaat om die pragtige en entoesiastiese samewerking te



noem en te loof wat daar kom van die kant van sekere werkgewers; en daarby en nie minder belangrik nie die gewaardeerde steun en bereidwilligheid van die geneeshere om aan hierdie fondse 'n afslag in fooie te gee wat wissel van 15-40% en sodoende ook hulle deel bydra. Met hierdie samewerking en leiding; en kontrole van die Departement van Gesondheid, sonder enige noemenswaardige finansiële verpligtinge aan die kant van die staat, sien ek in Suid-Afrika 'n netwerk van siekefondse verspreid oor die lengte en breedte van ons land. Dit sal myns insiens beteken 'n hoogstaande en gewilde geneeskundige diens vir almal. Dit sal sekuriteit en tevredenheid vir alle belanghebbendes bring, dit sal die staat nie oorlaai met bykomende uitgawes nie, en bo alles sal dit die euwels van sosialisering vermy.

Ek wil met al die erns tot my beskikking twee versoeke rig—albei baie redelike versoeke. In die eerste plaas dat die Departement van Gesondheid aktiewe leiding, aanmoediging en advies in verband met siekefondse sal gee aan alle werknemers. In die tweede plaas dat 'n kommissie van ondersoek binnekort benoem word om alle aspekte van siekefondse breedvoerig te ondersoek en verslag te doen met die oog op moontlike wetgewing en administratiewe stappe in die verband. In so 'n ondersoek sal belangrike en fundamentele beginsels ten opsigte van die volk se gesondheid geraak word en daarom vra ek u aandag ter toelating van hierdie versoek en aan te toon hoe noodsaaklik dit is om 'n omvattende verslag hieroor te kry.

Die eerste vraag wat ontstaan en wat uitvoerig ondersoek moet word is: Waarom so 'n siekefondsstelsel soos ek probeer skets het en nie 'n ander diens nie? Daar is verskeie grondige redes voor.

Die eerste oorweging is om nie 'n drastiese verandering teweeg te bring nie. Ontwrigting en skokke moet vermy word. Omdat mediese fondse 'n normale en spontane ontwikkeling is in Suid-Afrika sal dit dus nie skokke en ontwrigting meebring nie, maar slegs 'n uitbouing en verbetering wees van 'n reeds aanvaarde stelsel.

Die tweede oorweging is dat die Staat nie belas word met die koste hieraan verbonden, maar slegs in 'n toesighoudende en adviserende hoedanigheid sal optree. Hierdie beginsel naamlik dat die staat toesig en kontrole hou sodat basiese beginsels gehandhaaf word is trouens baie jare reeds erken wat betref versekeringsmaatskappye, handelsbanke

en ook in die wetsontwerp op onderlinge hulpverenigings.

Die derde oorweging is dat met hierdie stelsel die kardinale vereistes naamlik sekuriteit vir pasiënt sowel as geneesheer, vryheid van keuse vir albei en die behoud van verantwoordelikheid en mededinging bereik word, sonder dat daar blootstelling is aan die euwels van die sosialisme.

Ek verwys u na 'n artikel in die *S.A. Medical Journal* van 8 Mei 1954, bladsy 404.

„Medical Aid Societies help the very large proportion of the population who without them would be unable to afford private medical attention, and they help the profession because without them these people would either go without treatment or get free treatment at the hospitals. By taking work off the public hospitals they presumably reduce taxation. There is still another man whom they help. Most Medical Aid Societies are based on a business or industry, and the man who benefits most and, in general, for the least effort is the employer. He gains by the fact that when his employees become ill they can seek medical aid without fear and without delay, and consequently the general state of health amongst his employees is higher than if no Medical Aid Societies existed. Certain employers realize this and provide medical services for their employees. Further, the employers benefit by the fact that the very existence of a Medical Aid Society in a business is an inducement for people to become their employees; one sees advertisements in every paper along these lines.”

Die volgende vraag wat ontstaan en aandag vereis is:

Waarom 'n netwerk van siekefondse gebaseer op 'n besigheid of industrie, en nie een groot siekefonds vir die hele bevolking nie?

Wanneer 'n mens dink aan 'n enkele mediese fonds wat op nasionale grondslag almal moet bedien dan moet dit óf deur die staat óf groot versekeringsmaatskappye soos in die Verenigde State van Amerika onderneem word.

Dit is vir my nie aanneemlik nie. Hier is verskillende redes voor. Ek noem net enkele.

In 'n groot stelsel gaan persoonlikheid en individualiteit verlore en word dit gekommersialiseer ten koste van private inisiatief—en dit is juis die dinge wat behoue moet bly, want hou die volk selfstandig en hy sal homself handhaaf—maar as die volk verantwoordelikheid en individualiteit verloor sal hy ten onder gaan.

As ons dit hier doen, en dit kan gedoen word, sal selfstandigheid en verantwoordelikheidssin ook veel makliker op ander terreine gekweek kan word.

Daar is ook geweldige voordele vir die werkgewer in opgesluit en hy moet deel daarin hê. Meneer die Speaker, indien die werkgewer self deel in die siekefonds het en die

voordele sien en ondervind wek dit entoesiasme en belangstelling. 'n Gees van samehorigheid word binne die werkkring geskep, en in baie gevalle—ek praat nou natuurlik van die kleinere werkgewers—word die administrasie van die siekefonds deelyds deur die personeel gedoen teen 'n nominale fooi. Hulle het hul eie komitee wat bestaan uit werkgewer en werknemers gesamentlik, en omdat hulle mekaar se omstandighede ken is daar warmte en simpatieke plaaslike kontrole en skakel dit vanselfsprekend misbruike en euwels tot 'n groot mate uit.

Maar nou nog 'n vraag wat gestel kan word is:

Waarom so 'n stelsel nie vir almal verpligend maak nie? Dit is 'n redelike vraag, maar my antwoord is beslis *Nee*. En die rede is baie eenvoudig.

Die spontane ontwikkeling is in hierdie rigting en die vordering is vinnig. Dit sou onoordeelkundig wees om iets wat die mense graag wil hê en uit eie vrye beweging aanvaar verpligend te maak. Ek het 'n onwrikbare vertroue in die steun en samewerking van werkgewer, werknemer en geneesheer indien die ontwikkeling op 'n gesonde grondslag geplaas word en selfaanvaarde verantwoordelikheid is tog te alle tye die gesondste en die gelukkigste.

Die vraag wat hierop volg is: Waarom dan verpligte registrasie?

Nou ek dink nie daar kan twyfel oor bestaan dat dit wel wenslik is.

Dit sal meebring eenvormigheid en doeltreffendheid. Om alle siekefondse op 'n gesonde grondslag te plaas sal daar egter sekere eise vir registrasie soos byvoorbeeld onder die wetsontwerp op onderlinge hulpverenigings gestel moet word.

Hierop sal 'n ondersoekkommissie uitvoerig moet antwoord. Ek wil slegs enkele aspekte noem om die belangrikheid van 'n ondersoek te beklemtoon.

Moet dit 'n Mediese Hulpfonds of Mediese Bystandsfonds wees?

In die geval van die Hulpfonds—die *Medical Aid Society*—het die pasiënt 'n vrye keuse van geneesheer en word die grootste gedeelte van die koste gedra deur die hulpfonds waartoe hy maandeliks bydra. Die pasiënt bly egter verantwoordelik vir 'n klein gedeelte van elke fooi wat daar te betaal is; met ander woorde, hoewel die pasiënt beskerm is teen té groot uitgawes, bly hy nogtans mede-verantwoordelik vir elke besoek of behandeling wat hy mag geniet. Maar hy behou die reg om self te besluit wie die

geneesheer sal wees wat sy behandeling sal waarneem.

In teenstelling hiermee is die posisie in die geval van die Mediese Bystandsfonds—*Medical Benefit Fund*—dat die pasiënt nie verantwoordelik is vir 'n deel van die fooi nie, want hier word die hele bedrag deur die siekefonds betaal uit sy maandelikse bydrae, maar sy keuse van dokter is óf streng beperk, óf hy het glad nie 'n keuse nie. Dit is in hierdie geval waar die dokter vir 'n vaste salaris werk en feitlik 'n amptenaar geword het.

Die eerste (naamlik die Hulpfonds) is vereweg die beste, want die sukses van georganiseerde mediese dienste is grotendeels aangewys op die vrye keuse van dokter aan die een kant, en vrye keuse van pasiënt aan die ander kant.

Dit is tog immers eie aan die aard van die mens en ook eie aan die aard van ons volk. U en ek, en ten regte, wil self besluit watter geneesheer in die siekekamer sal kom.

Dit bring tevredenheid en versterk die agting en respek wedersyds tussen pasiënt en dokter; en dit, naamlik die absolute vertroue in, en hoop op, die behandeling en advies van die geneesheer is die heel belangrikste enkele faktor in die behandeling van die sieke.

Dit word verder aangevul deur die vergrote belangstelling van die geneesheer asook dienste van 'n beter gehalte want wat die geneesheer betref is daar as gevolg van vrye keuse kompetisie vir die behandeling van die pasiënt.

Ek verwys u in hierdie opsig na die standpunt van die *World Medical Association*. Gedurende die wêreldkongres wat verlede jaar in Wenen gehou is en waar Suid-Afrika ook verteenwoordig was, is hierdie aangeleentheid breedvoerig bespreek. Twaalf grondbeginsels is in die verband beklemtoon. Ek noem u net 5 wat hier van belang is.

1. Freedom of choice of physician by the patient. Liberty of physician to choose patient except in cases of urgency or humanitarianism.

2. Freedom of the physician to choose the location and type of his practice.

3. It is not in the public interest that physicians should be full-time salaried servants of the government or social-security bodies.

4. Any social security or insurance plan must be open to the participation of any licensed physician, and no physician should be compelled to participate if he does not wish to do so.

5. There shall be no exploitation of the physician, the physician's services, or the public, by any person or organization.

'n Ander baie belangrike aspek is in verband met finansiering. Dit is duidelik dat sodra daar eenvormigheid is wat betref fooie sal die ontevreidenheid wat soms gegrond, en dikwels uiters onregverdig is, uitgeskakel



word, en indien hospitalisasie moontlik ingesluit word sal daar 'n einde kom aan die ontsettende hoë tariewe van sommige private inrigtings en hospitale.

Die hele aangeleentheid van fooie en tariewe dek 'n geweldige groot veld wat nog nooit behoorlik ondersoek is nie, en daarom wil ek volstaan deur u te verwys na 'n artikel in die *Suid-Afrikaanse Mediese Tydskrif*.

'So it appears there are 3 main bodies who gain from the existence of a Medical Aid Society: the ordinary lower income group, the medical profession and, by no means least, the employer of labour. Now all who gain should contribute fairly in proportion to what they gain. The employee pays his subscriptions. The doctor assists by giving a preferential tariff—a tariff which we all know is only just economical for the doctor. Some employers, appreciative of the benefit they receive, subsidize the Medical Aid Societies liberally, but they are the exceptions. In general, employers do not pay into the Medical Aid Societies anything like the value of what they receive. I would like to see it a rule that the employers' contribution to Medical Aid Societies should be at least as great as that made by his employees, if not greater; the employees would then be better off because their contributions would be less and the employers would actually have a better appreciation of the value of the Medical Aid Societies and the work done for them by the profession.'

Ek stem saam met hierdie mening dat daar 3 persone is wat verantwoordelik is in hierdie opsig naamlik, die werkgever, die werknemer en die geneesheer.

Terwyl ons oor die finansiële aspek praat sal u herinner dat die Kaapse Provinsiale Administrasie nie langer kan volhou om vry hospitalisasie te verskaf nie. Ek ver wag die Transvaal sal hulle volg. Dit is 'n besluit wat ek dink op 'n ongelukkige tyd geneem is. Die oplossing van die moeilikhede wat betref die Provinsies en die steeds stygende uitgawes aan hospitalisasie lê myns insiens tot 'n groot mate opgesluit in 'n georganiseerde en beheerde siekefondsstelsel soos dié waarvoor ek 'n omvattende ondersoek vra. Ek verwys u weer eens na die *Mediese Tydskrif* van 1954.

'Medical Aid Societies help the very large proportion of the population who without them would be unable to afford private medical attention, and they help the profession because without them these people would either go without treatment or get free treatment at the hospitals. By taking work off the public hospitals they presumably reduce taxation.'

Indien siekefondse nie aangemoedig word nie sal die las al hoe meer val op die buit pasiëntdienste in die hospitale. Vroeër jare het die geneeshere hierdie werk gratis gedoen vir die Provinsies, maar vandag het hierdie ereposte verdwyn. Wanneer die massa gedek is deur siekefondse en net die behoeftige van gratis hospitaal en buite pasiënt dienste gebruik maak is ek oortuig daarvan dat die

geneeshere dit sal verwelkom en sal verkies om hierdie werk netsoos vroeër weereens as honorêre werk te doen. Geneeshere het nog altyd die versorging van die arme met 'n groot hart benader omdat dit 'n groot voorreg is om gratis behandeling te gee aan die minder-bevoorregte.

Dit is noodsaaklik dat daar kontrole oor siekefondse uitgeoefen sal word. Jaarlikse finansiële state sal moet voorgelê word om toe te sien dat die fondse behoorlik beheer word, dat daar nie verkwisting is nie en dat die administrasiekoste nie buitensporig is. Dit het onder my aandag gekom dat in sekere gevalle die administrasie tot so hoog as 40% van die totale koste beloop. Dit is ongehoord want dit behoort nie hoër as 2-5% te wees nie. Of hierdie beheer die funksie van die Departement van Gesondheid of dié van die Departement van Finansies behoort te wees is 'n ingewikkelde saak waarop breedvoerig ingegaan sal moet word en daarom wil ek my nie nou daarvoor uitspreek nie. Dit het egter niks met die beginsel van kontrole te doen nie.

'n Laaste punt van belang is dat die klem deesdae op die belangrikheid en waarde van die familiedokter val. Dit is verblydend en ek kan dit nie sterk genoeg verwelkom nie. Hulle is die enigste grondslag waarop 'n doeltreffende gesondheidsdiens gebou kan word en omdat 'n gesonde mediese fondsstelsel die familiedokter weer in sy regte perspektief plaas is ek so begerig dat die hele aangeleentheid ondersoek moet word.

Daar is talle ander belangrike aspekte soos byvoorbeeld, moet 'n geneesheer in beheer van 'n siekefonds wees, die posisie van die apteker en versekering dat minderwaardige medisyne nie gebruik word, die juiste plek van die tandarts, verpleging en mediesehulpdienste en nog baie ander oorwegings.

Ek laat dit egter daar want ek dink dit is vir Sy Edele die Minister van Gesondheid duidelik hoe belangrik hierdie ondersoek is, en ek weet dat Sy Edele die erns hiervan ten volle aanvoel.

Maar hier wil ek my ook rig tot Sy Edele die Minister van Finansies. Hy sit met die beursie en moet die geld vind vir die koste verbonde aan so 'n ondersoek. Ek mag net sê dat uit die aard van die saak die koste gering sal wees. Daar is lank genoeg met hierdie saak gewag. Die Departement het in die afgelope jare 'n afwagende houding aangeneem, maar ek dink die tyd is nou ryp en die verpligting rus swaar op die regering in hierdie verband. So 'n ondersoek sal allerweë verwelkom word. Dit raak 'n ieder en 'n elk

van ons, blank sowel as nie-blank, want vir albei hou dit groot moontlikhede in binne sy eie kring, en daarom twyfel ek nie dat u hierdie versoek gunstig sal oorweeg.

#### SUMMARY

The State has a large measure of responsibility for the health of the community. A State Medical Service is not, however, consistent with the South African national character and is undesirable for many other reasons. The extensive distribution of private medical practitioners throughout the land provides an adequate basis for medical services and, what is most important, permits the patient to have free choice of doctor.

Over the last 20 years we have seen the development of medical aid societies. This is sound in principle, and is the direction in which South Africa is moving naturally.

There are 3 groups of patients: 1. Paupers, the aged and pensioners, who are cared for without charge by Provincial and Central Government Authorities. 2. The very rich who can afford to look after themselves. Incidentally, there is no need for them to go overseas for medical advice and treatment. 3. A middle group of citizens who form the great majority requiring medical care, and who need the most consideration.

Services to-day are more extensive and complex and this large group cannot afford the high cost of modern medical attention. Artisans and similar persons of moderate means can be ruined by prolonged illness in the family.

Sick Benefit Societies have developed and the State has subsidized two funds to the extent of about £100,000 per year.

The enthusiastic co-operation of many employers and of medical practitioners who charge reduced fees, has made the success of these funds possible.

A network of these funds, providing security for its members, has grown up throughout the land. The State Health Department should encourage and give advice to these Societies and to all employers.

It is desirable that a Commission of Inquiry should be appointed soon to investigate all aspects of these funds and to report on the necessary legislation and the administrative steps that should be taken.

Why is there need for Medical Aid schemes such as have been outlined?

1. These schemes would not represent a drastic change. It would be part of the normal and spontaneous pattern of development in South Africa.

2. The State would not be saddled with the cost of the undertaking. Its function would be to guide and advise.

3. There would be security for patient as well as doctor and the scheme would be an insurance against the evils of socialism.

4. Many Societies are based on an industrial or a commercial undertaking and so act as an inducement for employment in the particular undertaking.

The question arises why there should be a network of Funds and Societies based on commerce or industry and not one comprehensive scheme for the whole population. A National Scheme would have to be undertaken by the State or large insurance companies and this is certainly not acceptable for various reasons, *inter alia*, loss of personality and individuality in such an undertaking; commercialization at the cost of private initiative—the very thing which must be preserved.

There are overwhelming advantages for the

employer who is participating, especially in the case of the smaller Funds.

A scheme compulsory for all is most definitely undesirable for the reason that spontaneous development is already advancing in this direction. Coercion is therefore totally unnecessary. Compulsory registration, however, is most necessary.

A Committee of Inquiry is necessary to investigate and settle these points amongst many others.

The question also arises whether the Scheme should be in the form of a Medical Aid Society or a Benefit Fund.

Medical Aid Societies provide free choice of doctor and the patient is responsible for part of the fee.

Benefit Funds have either a limited choice of doctor or no choice at all and the patient is not responsible for even part of the fee. The doctor works on a fixed salary and becomes virtually an official. Medical Aid Societies are by far the better in all respects because they permit free choice of doctor, and better professional services because of open competition between private doctors.

This principle has also been endorsed by the World Medical Association.

Another important aspect is finance. The three beneficiaries of the scheme are the lower-income group, the medical profession and the employers.

Contributions to the Fund should be in proportion to the benefits gained and in view of the greater advantage to the employers, their contributions to the Fund should be on a much larger scale.

The Cape Provincial Administration does not provide free hospitalization for all and the Transvaal Provincial Administration may soon follow suit. This is due to the increasing costs of hospitalization and the solution of the economic difficulties is tied up with an organized scheme of assistance to patients.

If these Funds and Societies are not encouraged, a burden will fall, and does already fall, on out-patient services of the public hospitals. If, on the other hand, the great majority of the population is protected by some type of Fund, doctors will readily once again undertake to provide the public hospitals with honorary medical services for those who need them and cannot afford to pay for them.

Some control over these Funds is essential to ensure their proper administration, to avoid extravagance and to keep down administration costs to a reasonable level.

It has been reported that administration costs have been as high as 40% of the total budget in certain cases. This is unheard of as the percentage should not be more than 2-5%.

Emphasis on the importance and value of family doctors is continually stressed. They constitute the only personnel who can provide a real basis for a sound medical service and the family doctor should be restored to his proper position and perspective.

There are, of course, numerous other aspects, e.g. should a medical practitioner be in charge of the Fund, what is the position of the pharmacists and what guarantee will there be that less useful drugs are not prescribed? What is the proper place of the dentist, the nurse and ancillary health services, etc.?

The cost of an inquiry is limited and the time is ripe for the duty rests heavily on the Government in this regard. A Commission of Inquiry will be welcomed by all, and there can be no doubt that such a request to the Government of the day should be considered most favourably.

## SKELETAL CHANGES IN ENDOCRINE AND METABOLIC DISORDERS

## XII. OVARIAN AGENESIS

W. P. U. JACKSON, M.D.

*Department of Medicine, University of Cape Town, Medical School, Mowbray, C.P.*

In 1938 Turner described 7 cases with webbing of the skin of the neck, cubitus valgus,

and infantilism. He noted that the short webbed necks of his cases were not due to any vertebral abnormalities, and bore no relation, therefore, to the Klippel-Feil group of conditions. He thought the syndrome might be of pituitary origin. This combination of features has become known as Turner's Syndrome (Figs. 1-6).

We now know that the sexual infantilism is caused by a lack of development of the gonad beyond the stage of the primary genital ridge, while the shortness of stature appears to be an almost invariable associated congenital abnormality. The other skeletal anomalies (particularly webbed neck, cubitus valgus and pes cavus) are frequently missing. The more we look out for this syndrome the more we discover cases



Fig. 1. Coloured girl aged 17 with 'ovarian agenesis'.

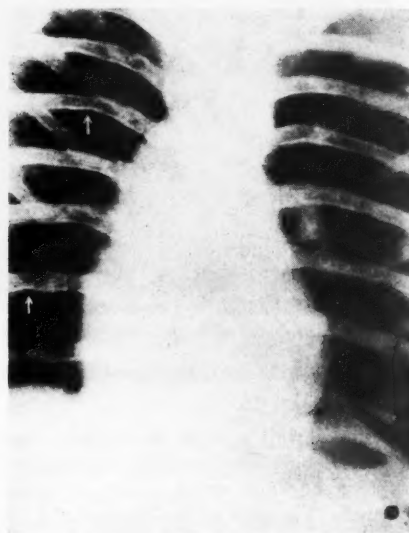


Fig. 2. Heart of the patient in Fig. 6, showing typical appearance of coarctation of the aorta with rib notching (arrows).

of ovarian agenesis with shortness of stature, but without all the features of Turner's syndrome.

Patients usually present with primary amenorrhoea and total lack of breast development. The nipples are tiny, the vagina and the uterus are infantile, and pubic and axillary hair are scanty. These secondary sexual characters can be partially rectified with oestrogens. The height is about 54 inches, and the

or even hypertension in cases where this is absent.

Differential diagnosis from hypopituitarism is not always easy in the absence of webbed neck or other associated anomalies, but sufferers from this are typically tiny, frail and delicate, with absent sexual hair and very retarded bone age, minimal 17-ketosteroids, insulin hypersensitivity, low urinary follicle-stimulating-hormone (FSH) content and a

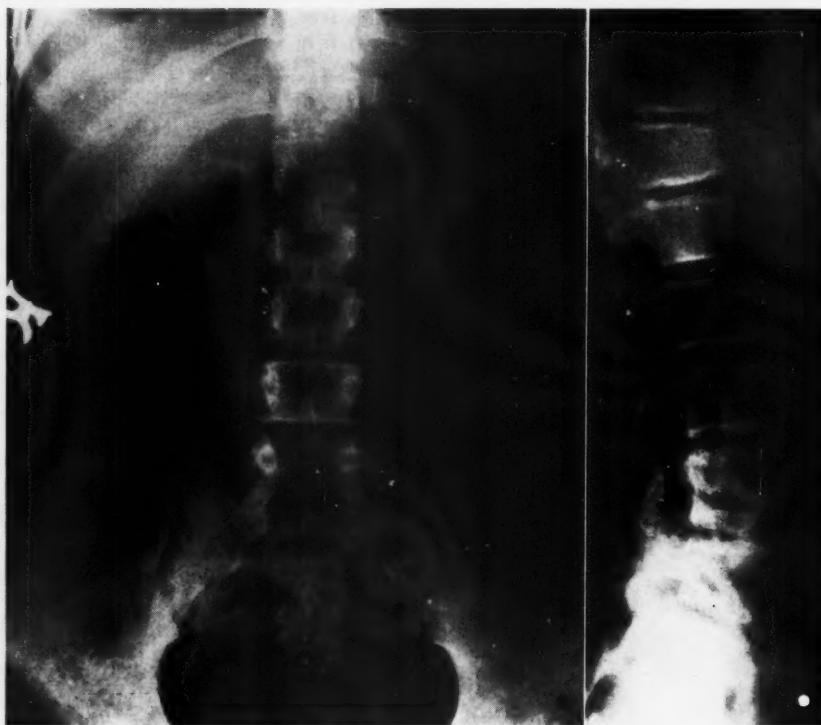


Fig. 3. (Left) X-ray of the girl in Fig. 1, showing minor osteoporosis, tiny 12th ribs and only 4 lumbar vertebrae.

Fig. 4. (Right) Lateral spine of a patient aged 18 showing minor vertebral irregularities.

build stocky with a wide 'shield-like' chest. The face is bird-like, frequently asymmetrical with receding chin, and a variety of ocular anomalies. The girls all look rather odd and are mentally puerile or facile. The diagnosis is suspected at a glance. Another curious associated anomaly is coarctation of the aorta,

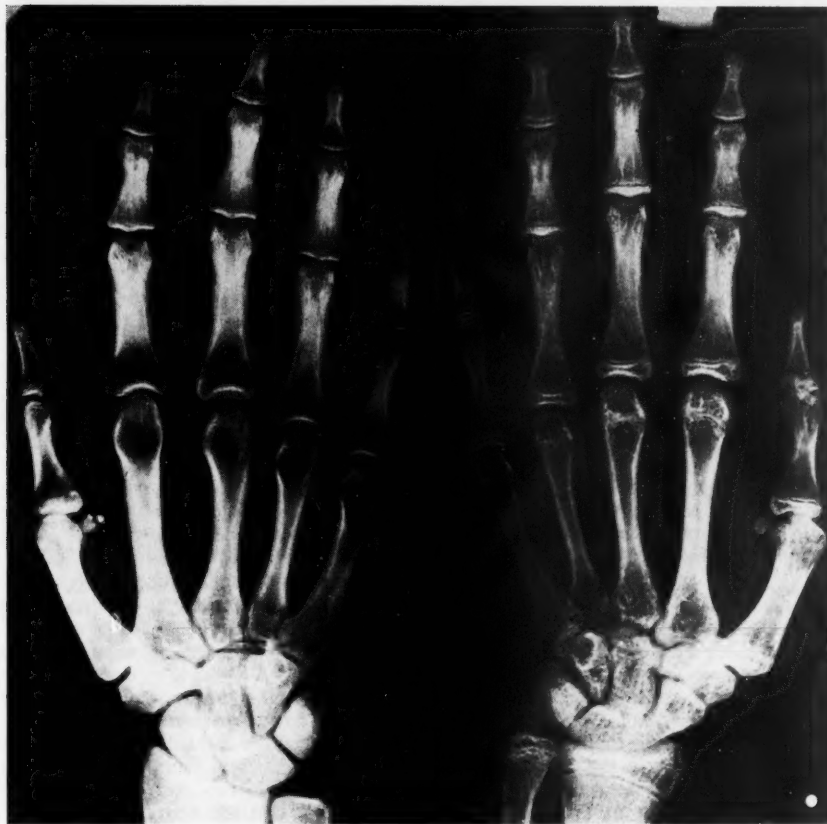
depressed metabolic rate. The greatest difficulties arise in those cases of hypopituitarism where only the growth and gonadotrophic hormone are lacking. Of outstanding importance is the finding of high urinary FSH in ovarian agenesis (about 192 mouse units in 24 hours).

## BONE ABNORMALITIES

These are not usually very prominent. The mandible is underdeveloped. Minor vertebral chondrodystrophy and other anomalies are common; the cervical spine, though occasion-

porosis is common, and presumed to be due to the lack of oestrogenic stimulus to the osteoblasts.

*Note:* On the basis of sexing the chromosomes of the nuclei of cells in the skin it has been claimed that these patients may well be



*Fig. 5.* On the right is the hand of the patient in Fig. 4, with a control of the same age. Note relative osteoporosis, slender bones and delayed fusion.

ally bifid, or fused (as in the Klippel-Feil syndrome) is usually normal. Cubitus valgus, pes cavus, talipes and syndactyly may occur.

The bone age is typically but slightly retarded—a matter of 2–3 years behind the mean female development. Generalized osteo-

genetically males. In the absence of any gonadal development the neutral form of the female appears despite the genetic maleness. It should be remembered that a female is, so to speak, an animated neuter; a male is a specialized female.





Fig. 6. Hands of a patient aged 12½ years, showing asymmetry of the radial epiphyses and other small irregularities.

#### OPSOMMING

Die kenmerke van eierstokagenesie word oorweeg, en die wyse waarop dit van die diagnose van hipopituitarisme verskil, word beskryf.

'n Paar van die kliniese en skeletmanifestasies van die toestand word geïllustreer.

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## CERTAIN TROPICAL DISEASES

### THE USE OF TERRAMYCIN IN THEIR TREATMENT

WILLIAM W. FRYE, Ph.D., M.D.

*Louisiana State University School of Medicine, New Orleans, U.S.A.*

There have been many new developments in the treatment, prevention and control of some tropical diseases during and since the close of the second world war. The discovery of Terramycin and other broad-spectrum antibiotics presented a new approach to the treatment of many of these diseases.

Broad-spectrum antibiotics, such as Terramycin, have not only widened the therapeutic horizon of the physician, but have been used successfully for the treatment of a wide variety of infectious diseases, including certain bacterial, rickettsial, viral and protozoan diseases. There has been some therapeutic success using



the antibiotics in treatment of one of the helminth infections in man.

The advantages of the broad-spectrum antibiotics in the treatment of tropical diseases are that they may be administered orally or parenterally and thus are widely distributed through the body fluids, tissues and secretions in almost every organ in therapeutically effective concentrations. Minimal toxicity has been encountered in dosages adequate for therapy and serious reactions have been rare. With Terramycin the side effects have been limited to the gastro-intestinal tract for the most part and these reactions have been of little consequence. Ambulatory treatment can be advised without fear of bad results. Because of the chemical structure of Terramycin it is freely soluble in the body and can be stored at ordinary temperatures for long periods of time without loss of activity. The variety of preparations of Terramycin for oral, intravenous, parenteral and topical use allows one to cope with all conceivable problems of therapy.

Antibiotics have made possible the control of certain diseases that have been a major factor in retarding progress in certain tropical countries. One of the outstanding examples is the use of penicillin in the mass treatment and control of yaws. During recent years it has been found that Terramycin is the most effective agent now available for the treatment of certain of the late manifestations of yaws. Although this broad-spectrum antibiotic has been found effective in the treatment of all stages of this disease, the most spectacular results have been obtained in the healing of the destructive and deforming lesions, which have been resistant to procaine penicillin therapy in mass control studies.

Although preliminary reports are encouraging, the value of Terramycin in the treatment of other treponemal diseases, such as bejel and pinta, must await further studies.

There is little or no experimental or clinical evidence to indicate that Terramycin is of value in the treatment of the commonly encountered viral infections. Certainly it has no place in the *primary treatment* of the common cold, influenza, poliomyelitis, encephalitis, measles, rabies and others. If Terramycin has any role whatever in the treatment of these viral infections, it is in the possible control of secondary infection.

There is some experimental and clinical evidence that Terramycin may be effective in the treatment of certain diseases closely related to the viruses. It has been reported that antibiotics are effective in the treatment of

psittacosis. Henley (1953) reported that Terramycin was significantly more effective in the treatment of early *Lymphogranuloma venereum* than was the standard method of treatment using sulphonamides and antimony.

It has been shown by Rose (1950) that Terramycin is highly effective in the treatment of rickettsial pox. Smadel and his colleagues (1950) reported that Terramycin was more effective than other broad-spectrum antibiotics in the treatment of experimental infections with the causative agent of Q fever. Other studies have shown that Terramycin is highly effective in the treatment of clinical infections of a number of diseases caused by rickettsiae.

Terramycin has been found useful in the treatment of certain spirochaetal diseases which are common in some tropical areas. This antibiotic, in low dosage, has been found capable of sterilizing the blood of rats experimentally infected with the organism producing relapsing fever in man.

There have been reports of satisfactory treatment of Weil's disease caused by *Leptospira icterohaemorrhagiae*, with Terramycin if therapy is started early in the course of the disease. However, the results obtained in some clinical trials *in vitro* and in experimental infections in laboratory animals have been somewhat disappointing.

It is obvious that much more work must be done before the therapeutic status of Terramycin and other broad-spectrum antibiotics, in the treatment of the various spirochaetal diseases can be properly evaluated.

Since the discovery of Terramycin its effectiveness in the treatment of amoebiasis has been studied in all parts of the world. This broad-spectrum antibiotic, along with others, has been used in all forms of amoebiasis from the severe acute amoebic dysentery to the symptomless carrier.

Early studies by Most and van Assendelft (1950-51) indicated that Terramycin was highly effective in eradicating *Entamoeba histolytica* from the intestinal tract of Man and suggested that the dosage should be 2 g. daily for 10 days. They also noted that Terramycin was not effective against the intestinal helminths and flagellates occurring in this group of patients. This group of patients did not have acute amoebic dysentery, but represented the average type of infection with *E. histolytica* seen in the United States at the present time. Numerous studies since this original clinical trial have confirmed the value of Terramycin in the treatment of intestinal amoebiasis. During 1951 Killough and Magill

reported the successful use of Terramycin in the treatment of severe cases of acute amoebic dysentery. In this group one patient developed an amoebic liver abscess during therapy. Early in 1952 Elsdon-Dew, Armstrong and Wilmot used Terramycin in the treatment of patients having diarrhoea with blood and mucus in the stools, with amoebic ulceration of the mucosa seen on sigmoidoscopy.

Two patients, in a series of 49, given 1 g. of Terramycin daily for 15 days, developed hepatitis, which progressed in spite of continued treatment with Terramycin. This necessitated the use of emetine on the sixteenth day in one case and chloroquine on the sixth day in the second. Both patients were 'successes' from the intestinal standpoint before the emetine or chloroquine were used to treat the liver involvement. In this study it was found that Terramycin produced an immediate apparent cure in a high percentage of patients with acute ulcerative amoebic dysentery, but that it was not of any value in cases with liver involvement. These workers discussed the possible mode of action of Terramycin, considering whether it is an effect on the intestinal bacteria or on the amoebae. At the present time we know that Terramycin has a direct effect on the associated bacterial flora and there is increasing evidence that there is a direct amoebicidal effect.

Frye, Brooke and Weinstein (1952) presented a preliminary report on the use of certain antibiotics in the treatment of acute amoebic dysentery in the United Nations prisoner-of-war camp in Korea during 1951. Terramycin was found to be the most effective of the broad-spectrum antibiotics used. All patients were followed for 6 weeks after completion of therapy. Martin, Frye, *et al.* gave a complete report of this study, showing the comparative efficacy of antibiotics and other amoebicides in the treatment of acute amoebic dysentery. The antibiotics and other amoebicides were used alone and in combination in the treatment and 6 weeks' follow-up of 538 patients with acute amoebic dysentery. The criteria for acceptance of a diagnosis of acute amoebic dysentery in this study were the presence of diarrhoeal disease with mucosanguineous exudate in the stool, visualized enteric lesions, and the presence of trophozoites of *E. histolytica*. No asymptomatic cases with only cysts and without demonstrable symptoms or lesions were considered in this study. A total of 104 patients were treated with Terramycin in varying dosages, and all responded clinically. Six of the 104 patients

relapsed, 3 early in the follow-up period and 3 later. One of the 6 had clinical amoebic hepatitis. The remaining 98 were well and free of evidence of recurrent infection at the end of 6 weeks. There were surprisingly few gastro-intestinal side reactions to Terramycin in this group of patients.

In a recent study Sappenfield, Frye, *et al.* used Terramycin in the treatment of a large group of persons involved in a water-borne outbreak of amoebiasis. The epidemic was confined to the employees of a woodworking plant. Stool specimens were obtained from the employees and examined for *E. histolytica* and other intestinal parasites. The examinations were repeated until a diagnosis of amoebiasis was made or until 4 negative specimens had been submitted by the patient. Terramycin was used to treat 405 persons found infected with *E. histolytica*. There were no gross signs or symptoms in any of the positive cases and all were working regularly; 1 g. of Terramycin was given twice daily for a period of 10 days. A treatment schedule was arranged so that one half of the daily medication was taken in the morning in a treatment centre set up in the plant. The other half of the daily dose was given to the patient to take just before leaving the plant at the end of the day's work. During the entire 10-day treatment period there was daily contact between each employee and the medical personnel supervising the treatment programme. A record of complaints was kept on each patient and they all continued with their routine work.

The most common complaints recorded in the treatment of this group of ambulatory patients with Terramycin were loose stools, slight abdominal cramping and an occasional feeling of nausea. These complaints appeared more frequently after the fourth day of therapy and usually lasted for 48-72 hours.

Anal itching was the most frequent complaint occurring after Terramycin therapy was completed. This usually cleared rapidly if the area was kept clean and a bland ointment applied to protect against moisture. None of those treated missed work because of reactions from the Terramycin therapy.

Terramycin was selected as one of the drugs to be used in this treatment programme since it had been found effective in treating asymptomatic cases and in order to re-confirm its effectiveness in a large number of patients in which a long follow-up period was possible. Of the 405 patients treated with Terramycin, complete records and follow-up stool examina-

tions were available on 358 subjects. After one course of therapy with Terramycin 338 (94.4%) of the patients had 4 negative stool examinations over a period of 4 months. Approximately one year after the treatment programme was completed a random survey of the treated patients revealed only 1.1% to be positive as compared with 51% in the original random sample before therapy was instituted.

This study re-confirmed that Terramycin is an effective therapeutic agent in the mass treatment of asymptomatic amoebiasis. This type of infection with *E. histolytica*, or with mild symptoms, is the most common type seen by practising physicians in the United States. As has been mentioned, extra-intestinal amoebiasis is not eliminated with the broad-spectrum antibiotics. It has now been over 2 years since this treatment programme was completed and there have been no reports of liver abscess or other extra-intestinal amoebiasis in the 405 patients treated with Terramycin.

This study shows that Terramycin is an effective, safe, relatively non-toxic amoebicide that will aid the physician in the management of intestinal amoebiasis. It has also been demonstrated that in mild and asymptomatic amoebiasis, patients may be treated while continuing their routine work.

The effect of the antibiotics against the non-pathogenic amoebae and flagellates found in the intestinal tract of man have not been studied carefully. Evidence available indicates that the antibiotics are less effective against these non-pathogenic protozoa than against the pathogenic amoeba, *E. histolytica*. One of the intestinal flagellates, *Giardia lamblia*, differs from the other intestinal protozoa in that it inhabits the upper small intestine rather than the large intestine. The amoebicides have little or no effect upon *Giardia* infections. The antibiotics have also failed as a therapeutic agent in the treatment of giardiasis.

Infections with *Balantidium coli* produce ulceration of the large intestine similar to amoebic lesions. A few reports have recently appeared which describe the use of antibiotics in the treatment of balantidiasis. Weinstein, Garfinkel and Miller reported the treatment of one patient with balantidial dysentery with Terramycin. Two weeks before admission to the hospital the patient had a sudden onset of abdominal cramps and tenesmus. His stools became soft and contained small amounts of mucus and blood. Stool examination revealed numerous trophozoites of *Balantidium coli*.

Sigmoidoscopic examination showed a mild hyperaemia of the rectal mucosa but no definite ulceration. Rectal swabs cultured for bacterial enteric pathogens were negative but daily stool examinations were consistently positive for trophozoites of *Balantidium coli*. The patient was started on treatment with Terramycin; 2 g. were given the first day in a single dose, and followed by 0.5 g. 3 times daily for 10 days. Trophozoites of *Balantidium coli* disappeared from the stools on the second day of treatment and the patient was free from all signs and symptoms. Balantidiasis is a rare infection in man, and is seldom seen in the United States. The infection is more common in other parts of the world. The broad-spectrum antibiotics used in the treatment of this intestinal parasite have been effective.

The use of antibiotics in the treatment of intestinal helminths has been much less effective than against the intestinal protozoa, particularly *E. histolytica*. Brown gave mice naturally infected with both *Syphacia obvelata* and *Aspicularis tetraaptera* 100,000 units of bacitracin per kg. body weight in one oral dose. It was found that this single dose of bacitracin eliminated these pinworms from 15 of 31 mice, and those not cured harboured fewer worms than did the control mice.

Wells, in laboratory investigations with the mouse pinworm, observed that Terramycin decreased the worm burden and stunted the growth of remaining worms. On the basis of these observations, clinical trials with this antibiotic were undertaken with patients infected with the human pinworm, *Enterobius vermicularis*. Wells *et al.* treated a series of 61 patients in family groups with Terramycin hydrochloride, grading the doses according to age. The adult dosage was 2 g. daily in a single dose for 5 days. The patients were examined daily during a 7-week follow-up period after the completion of therapy.

Loughlin *et al.* treated 30 patients harbouring pinworms with Terramycin base. During a 5-week follow-up period there was one reinfection but no evidences of relapse. The effect of Terramycin in enterobiasis were manifested by alteration of the morphology of the eggs, regressing maturation with each successive day of therapy until the disappearance of eggs from scotch tape impressions.

These studies in both the experimental animal and in the human show that Terramycin and other antibiotics have an adverse effect on pinworm infection. The effect seems to be more marked against the immature forms of this helminth. Terramycin was also found

to be better tolerated than gentian violet in the treatment of pinworm infections in man.

Loughlin, Rappaport and Wells report that *Ascaris lumbricoides* was expelled by Terramycin therapy and that hookworm and *Trichuris* egg counts were reduced. These studies indicated that pinworm and *Ascaris* are more susceptible to antibiotics than are hookworm and *Trichuris*.

Brown, Mann and Fratta tested the therapeutic effect of 5 antibiotics, Terramycin, Aureomycin, penicillin, streptomycin and bacitracin, against ascarids of the cat. These antibiotics were administered orally in a large single dose given for 5 consecutive days. On the third post-treatment day the animals were sacrificed and the entire gastro-intestinal tract thoroughly searched for worms.

Terramycin, Aureomycin and streptomycin all had some effect against the cat ascarid, but they were without immediate effect on hookworm or the tapeworms present in the intestine. Penicillin and bacitracin (given orally in large doses for a period of 5 days) were without effect on the tapeworm and hookworm and only slightly effective against the ascarids. The antibiotics in this study were found to be relatively ineffective anthelmintics against the ascarids, tapeworms and hookworms of the cat.

In our overall study and treatment of intestinal infections in Korea, our main objective was to find the most effective drug for the treatment of acute amoebic and bacillary dysentery (Table 1). It was possible to observe the effects of the antibiotics used in eliminating other animal parasites from the intestinal tract of man. Only 3 antibiotics were used, Terramycin, Aureomycin and Chloromycetin. A complete analysis of all treatment records has not been made, but during our follow-up it was noted that these antibiotics had little

or no effect against *Ascaris*, tapeworm, hookworm or *Trichuris*. These parasites were found before and after therapy with the broad-spectrum antibiotics in patients with acute amoebic dysentery. In this group of patients the prevalence rate of helminths and other worms was very high.

#### SUMMARY

The use of the antibiotics now available for the treatment of the so-called tropical diseases has been satisfactory in some types, disappointing in others. Terramycin has been found to be effective against most of the spirochaetal diseases and certain intestinal protozoa. Terramycin is a highly effective agent in the treatment of all forms of intestinal amoebiasis but ineffective in extra-intestinal infections, especially amoebic liver abscess with *E. histolytica*. Terramycin has been used with some success in the treatment of pinworm infections in Man. The other helminths, which are so important in certain tropical areas, do not respond to antibiotic therapy. Thus with the exception of the spirochaetal diseases, intestinal amoebiasis, and pinworm infections, other drugs are more effective against the animal parasites of Man than are the antibiotics.

It is hoped that with the discovery of new antibiotics one will be found that will be active against certain animal parasite infections, such as schistosomiasis, for which no effective therapeutic agent is now available.

In other parasitic infections we need therapeutic agents that are not only effective in removing the parasites but are less toxic and easier to administer than those drugs now available. Thus careful study of the efficiency of all antibiotics in the treatment of tropical diseases must continue.

TABLE 1: RESULTS OF TREATMENT OF ACUTE AMOEBIC DYSENTERY  
ASSESSED AT THE END OF 6 WEEKS

	Number of Patients Treated	Success		Failure	
		Number	%	Number	%
Terramycin	40	39	97.5	1	2.5
Aureomycin	41	29	70.7	12	29.3
Chloromycetin	39	21	53.8	18	46.2
Terramycin	104	98	94.3	6	5.7
Supportive Therapy	66	11	16.6	55	83.4



## OPSOMMING

Die gebruik van die tans beskikbare antibiotica vir die behandeling van die sogenaamde tropiese siektes was bevredigend in die geval van sommige tipes, en teleurstellend in andere. Daar is bevind dat Terramycin doeltreffend is teen die meeste spirocheetsiektes en teen sekere ingewandsprotosoa. Terramycin is 'n hoogs doelmatige middel by die behandeling van alle vorms van ingewandsamebiasie, maar ondoeltreffend in die geval van buite-ingewandsinfeksies, veral amebiese lewerabses met *E. histolytica*. Terramycin is met 'n sekere mate van welslae gebruik vir die behandeling van aarsmaaier-infeksie by die mens. Die ander helminte wat so belangrik in sekere tropiese streke is, reageer nie op terapie met antibiotica nie. Met die uitsondering dus van spirocheetsiektes, in-

gewandsamebiasie en aarsmaaier-infeksies, is ander middels doeltreffender as die antibiotica teen die dierlike parasiete van die mens.

Daar word gehoop dat, met die ontdekking van nuwe antibiotica, een ook gevind sal word wat aktief sal optree teen sekere dierlike parasitiese infeksies, soos schistosomiase waarvoor daar op die oomblik geen doeltreffende terapeutiese middel bestaan nie.

In die geval van ander parasitiese infeksies het ons behoefte aan terapeutiese middels wat nie alleen daarin sal slaag om die parasiete te verwyder nie, maar ook minder toksies is, en makliker toegedien sal kan word as die middels wat op die oomblik beskikbaar is. Die sorgvuldige bestudering van alle antibiotica wat vir die behandeling van tropiese siektes gebruik word, moet dus voortgesit word.

## POISONING IN CHILDHOOD

## A STUDY IN PREVENTABLE DEATH

F. FRIEDLANDER, M.B., Ch.B. (CAPE), M.R.C.P. (EDIN.),

R. DRUBIN, M.B., B.Ch. (RAND)

and

MARIAN VEITCH, B.Sc., M.B., B.Ch. (RAND)

*Transvaal Memorial Hospital for Children and the Department of Paediatrics,  
Witwatersrand University, Johannesburg*

(Continued from p. 581)

## DISCUSSION

Various series of cases throughout the world indicate that local categories of poisoning vary somewhat. In a series reported in the Philippines<sup>11</sup> paraffin and food poisoning accounted for over 80% of cases and anthelmintics for a further 6%. In Hawaii, Chun<sup>12</sup> (reporting 221 cases) noted 69 (31.3%) of kerosene ingestion, 17 of arsenic poisoning, 13 of eucalyptus oil, 7 of barbiturate ingestion and only 4 cases of aspirin ingestion. Kerosene accounted for 51% of the series reported by Ryan<sup>1</sup>, followed by food poisoning, other petroleum products (Shell-tox, Shellite, petrol, etc.), barbiturates and only 1.3% of salicylate poisoning. Bain<sup>4</sup> estimated that in the U.S.A. petroleum products (kerosene, petrol, etc.) were the commonest poisoning agents, especially in the southern States, followed by aspirin and barbiturates. Fraser<sup>13</sup> reported the commonest causes of poison deaths in the child population in the United Kingdom to be ferrous sulphate, antihistamines, strychnine and aspirin, followed

by the household materials caustic soda, lead, disinfectants and then only kerosene. The state of social advancement of any country or region can almost be gauged by the poisons its children swallow.

Certain trends in Johannesburg can be noted from our series of cases.

The total amount of poisoning in the area which this hospital serves has increased in the past few years. The figures of Drubin and Cohen<sup>5</sup> for the years 1948-52 show that the percentage of admissions steadily rose from 2.2% in 1948 to 4.1% in 1951. There was a slight drop in 1952 but 1953, 1954 and 1955 all showed an increase over the previous 5 years; the average for the 3 years is 4.3%. The average for the previous 5 years was 3.1%. Concomitantly, the total admissions rose annually.

Our figures agree with those from other centres in the age incidence of poisoning. Thus in Ryan's series<sup>1</sup> 697 (72.6%) of 960 cases were between the ages of 1 and 3 years, in Craig and Fraser's series<sup>2</sup> 65.9% of 502 cases were in this

age group, as were 45 (78.9%) of the 57 cases reported by Elyan and Stretton.<sup>14</sup>

Certain types of poisoning have declined in recent years. The effects of this decline have been neutralized by the advent of new poisons—particularly those caused by drugs. The high incidence of poisoning by the therapeutic administration of aspirin to young infants (particularly when this is given in conjunction with sulpha drugs) has dropped considerably from the high level quoted by Heymann, Javett and Rudolph.<sup>15</sup> In the past 2 years in only 2 cases of this type of poisoning has a medical practitioner prescribed the drug. This we feel is probably due to the publicity that the condition has received in the medical press in the Union and by constant reiteration of the dangers of prescribing this drug to dehydrated infants. If the profession employed adequate facilities for advertising the dangers of drugs, the few cases of therapeutic poisoning would be further reduced. The drop in the incidence of therapeutic intoxications with aspirin have been more than offset by the increase in the number of accidental ingestions of aspirin, leaving the total number of cases of aspirin poisoning at the same level.

Paraffin remains at the head of the list of poisons; not as high a percentage of cases as in Tupas and Daus-Lowas' series,<sup>11</sup> but far higher than in Fraser's review.<sup>13</sup>

The other poisons which cause an appreciable percentage of cases have not altered much. Arsenic (usually in the form of ant poison), barbiturates and food poisoning retain their positions. However, the incidence of lye burns of the mouth and oesophagus has declined somewhat. The ingestion of lye is probably declining because of the introduction of other agents for cleaning drains and lavatories and also because of the cessation of the wartime practice, when many people in South Africa made their own soap.

Newer poisons have entered the stage although not, fortunately, in the numbers seen elsewhere. Ferrous sulphate, an important cause of poisoning in the United Kingdom, was in evidence in 1953 (1 case) and 1955 (5 cases), although before 1953 only one case had been treated in this hospital. Chlorpromazine (Largactil) now being widely prescribed, made its first appearance in 1955. The newer hypotensive drugs (Ansolysen, Serpasil, etc.) have been ingested experimentally by the toddler population of Johannesburg. Anti-histamine drugs are not common poisoning agents in this area. Follidol (parathion), one of the most deadly insecticides, was taken

by 2 children in 1955. The first child was brought to hospital immediately and arrived in the Casualty Department 15 minutes after the ingestion of the insecticide. This child died as it was being taken into the hospital. The other case is reported in full as it survived—an unusual outcome in poisoning by this drug, when taken in one large dose.

The increasing incidence of potassium permanganate poisoning is difficult to understand. Drubin and Cohen<sup>5</sup> found only 10 cases in the previous 5 years in the hospital and we have seen 15 in the past 3 years. It is an unusual form of poisoning, not many cases being described. Ritchie<sup>16</sup> in 1953 was only able to find 40 cases reported in the British and American literature up to that time. Of these 4 died in addition to the case that she reported.

Fortunately all our cases have recovered. The foregoing clinical description of a typical case is in accord with other reports. Death, when it occurs, is due to oedema glottidis and pulmonary congestion, to bronchopneumonia, haemorrhage from erosion of a vessel or intestinal perforation. Autopsy has, in a few cases, revealed renal tubular necrosis or liver damage.

Ferrous sulphate poisoning is now probably a permanent inhabitant of our list of poisons. For many years dosage with iron preparations has been the standard treatment of many types of anaemia, but it is only recently that poisoning with this metal and its compounds has become a problem. That it has reached serious proportions can be inferred from the fact that a leading American journal has seen fit to devote 3 editorials in 3 years to this condition.<sup>17,19</sup> Case reports, which first appeared in the British literature,<sup>20,21</sup> have now been duplicated in many countries. Severe iron poisoning has a high death rate—50% in some series. The clinical picture can be divided into 2 phases:

*An initial stage*, starting about 1 hour after ingestion of the tablets and lasting for 12–18 hours. In this phase there is a considerable amount of shock—pallor, tachycardia, vomiting and what the *Journal of Paediatrics* describes as a 'drowsy restlessness'.<sup>19</sup> The vomitus is usually blood-stained and there may be severe watery diarrhoea. Lassitude is a cardinal feature. The patient may die during this phase. If the patient recovers from this shock-like state there may be no further symptoms and the improvement will be sustained.

The improvement may, however, be tem-



porary and followed by increase in lassitude and gradual worsening of symptoms, often with convulsions and coma. This is the second critical phase lasting from about the 24th—48th hour. A further appreciable percentage of cases die in this time. Autopsy shows severe haemorrhagic necrosis of the stomach and upper part of the small bowel with many thromboses of the small vessels draining the gut. There is also evidence of periportal hepatic necrosis. Here we have a new type of poisoning, which is becoming increasingly common, so common that it is one of the major causes of death in accidental poisoning in the United Kingdom.<sup>13</sup>

The main increase in the past year has been in the group of cases caused by the ingestion of drugs. This group contains 11 cases of poisoning due to the newer drugs—5 of hypotensive agents, 5 of ferrous sulphate and one of chlorpromazine. However, this may not be sustained as in 1954 there was an increase in ingestion of household articles, particularly petroleum products other than paraffin, and in potassium permanganate. Arsenical poisoning dropped in this time.

Due to the shortage of beds in the hospital the Casualty Department staff have been obliged not to admit every case. Consequently some of the cases of ingestion of non-lethal substances have been given treatment and then discharged, some have been advised by telephone and a few have been admitted to other hospitals. A record has been kept of all these cases for the last half of 1955 which therefore gives an accurate incidence of poisoning in the area served by this hospital. These figures are the only ones we know of for total poisonings treated—most series quote only admissions to hospital. It can be observed that the figures for admissions are less than double the amount of poisonings attended to and not admitted to hospital. This shows a far greater incidence of poisoning than one anticipates—an incidence of 0.46% of all Casualty attendances, which include the several thousand Casualty re-attendances for dressings, reading of Mantoux tests and other follow-up procedures.

Poisoning in the youngest age group (0—6 months) is exclusively due to misguided medication by parents or to accidental overdosage with drugs prescribed by doctors. Thus almost all the therapeutic intoxications with aspirin occurred in this age group and the group contains items such as overdosage with Eumydrine, Syr. Cocillana Co. and Seconal.

The oldest age group (5—14 years) consists mainly of boys (as is to be expected) and contains many cases of food poisoning (rarely one isolated case), dry ice poisoning and the only cases of snake bite (not strictly a poisoning but classified in the hospital records as such). The other poisonings in this group (several of caustic soda, some of paraffin and barbiturate poisoning) were all in the younger children in the group. One case of *Filix mas* overdosage occurred in this age group.

In common with experience elsewhere, we had no case of attempted suicide in our series. In one case it was felt that the child (aged 13) took barbiturates as an attention-seeking device; but he took excellent care only to make himself sleepy, and was never in any danger of losing his life.

It was felt that it would be of interest to obtain the statistics in regard to poisoning in the 2 large Bantu hospitals in the Johannesburg area, and through the kind offices of Dr. S. Wayburne<sup>22</sup> and Dr. H. Falcke<sup>23</sup> (of the Paediatric Departments of the Baragwanath and Coronation Hospitals respectively) these were obtained. They came as a surprise to us, as there were comparatively few cases.

At the Coronation Hospital out of a total admission of 3,737 'medical' paediatric cases in 1954 and 1955, only 80 were cases of poisoning. Of these, 25 were paraffin and other petroleum products, 17 food poisoning, 9 caustics (potassium permanganate and lye) and 18 were either types with a single example or were unspecified poisons. This figure compares very favourably with the average of about 170 cases of poisoning seen in the Transvaal Memorial Hospital annually over the same period. (The Transvaal Memorial Hospital admission figures were for all types of case—medical, surgical, orthopaedic, E.N.T., etc.)

The statistics for Baragwanath Hospital for 1955 showed an even smaller admission rate, the total cases being 58. Of these 13 were due to petroleum products, 22 were caustics (lye and potassium permanganate) and there were no cases of aspirin poisoning.

In both series carbon monoxide occurs. This is not seen at the Transvaal Memorial Hospital, because the Bantu population sleeps in winter with all windows and doors locked and a fire lit (often in an improvised fire-place). The statistics for the Baragwanath Hospital are conditioned by the fact that there is a great shortage of beds and many poisoning cases are only admitted overnight for observation and

do not pass through the books of the hospital. Dr. Falcke informs us that at the Coronation Hospital every poisoning case is admitted if possible. It is a peculiar fact that the hospitals serving the least privileged, both socially and economically, should have the lowest poisoning rate. The reason for this cannot be entirely economic, as most Bantu homes contain many potential poisons; and seeds, mushrooms and other poisonous plants flourish in Bantu areas as well as in White areas.

The reasons given elsewhere for the increase in poisonings<sup>2,4</sup> do not appear to obtain in this series. The amount of fluids ingested is far higher than the amount of tablets and in our series of cases the *Household* section is far greater than the *Drug* section. There is one over-riding reason in our cases—carelessness. Thus most of the cases of drug ingestion were children who had managed to obtain medicaments which had not been safely stored and were easily accessible to toddlers. The enormous amount of poisoning from household materials shows that parents are not aware of the possible dangers of articles such as paraffin, ant poisons, D.D.T., potassium permanganate, etc. In a large percentage of cases the mother was at work and young children were left to neighbours or to African servants during the day. In other cases the poisoning occurred whilst the mother had left the house for a short period. Any decrease in the poison rate will only be brought about by intensive propaganda by all methods. The average annual morbidity and mortality rate for poisoning is far higher than it is for poliomyelitis. Yet if a fraction of the money spent on the latter were available for preventive measures against the former, one could probably show excellent results. Unfortunately the essentially theatrical appeal of poliomyelitis is lacking in the measures against poisoning.

#### ADDENDUM: PARATHION

This insecticide was developed in Germany during the World War II as part of a programme to replace nicotine, which was in very short supply. The products developed were hexaethyl tetraphosphate (HETP), tetraethyl pyrophosphate (TEPP) and parathion (O, O-diethyl O-para-nitrophenyl thiophosphate). Parathion is marketed under a number of trade names—Bayer E605, DPTF, Bladan, Follidol, Thiophos, Niran, Alkron and several others all containing parathion as a part of the title.

Of these 3 insecticides the most deadly and also the most stable is parathion. They are all phosphate esters.

Parathion is a cholinesterase-inhibiting agent and in the presence of this material acetylcholine accumulates in the tissues. The effects are similar to those seen in uninhibited action of the parasympathetic nervous system. Signs of poisoning appear rapidly—within 5 minutes<sup>24</sup> and death may occur rapidly, as happened in the case which was dead on arrival at the Transvaal Memorial Hospital. However, in many cases, as in our patient who survived, the effects of the drug may not be apparent for several hours. These effects are similar whether the poison is ingested, inhaled, injected (obviously only in experimental animals) or absorbed through the skin.

The actions are muscarine-like, nicotine-like and also affect the central nervous system.

#### MUSCARINE-LIKE EFFECTS

*Gastro-Intestinal Tract.* Anorexia and nausea followed by excessive salivation, vomiting and abdominal cramps. If the dose is excessive, involuntary defaecation may follow.

*Cardiovascular System.* Elevation of the blood pressure. Circulation in the skin is not much affected. It may be increased and the skin is warm.

*Respiratory System.* Respiratory difficulty may be seen but the most striking reaction is the gross degree of bronchial secretion which gives the impression that the patient is drowning. This reaction proceeds to pulmonary oedema.

*Other Systems.* Sweating is excessive. The pupils are small and do not react to light.

#### NICOTINE-LIKE EFFECTS

Muscle fasciculations are seen—first in the muscles of the tongue and the eyelids, spreading later to involve the skeletal musculature. These fibrillary twitchings involve the diaphragm most severely.<sup>25</sup>

*Central Nervous System Effects.* Early effects consist of giddiness, restlessness and headache followed by ataxia, tremor, drowsiness and mental confusion, proceeding (in severe cases) to coma and generalized convulsions.

Parathion is cumulative to some extent as it is more stable than the other poisons in this group and therefore there may be chronic effects. In our 2 cases there were none of the minor effects usually seen in agricultural workers. We dealt with the ingestion of a single large dose of parathion.

The antidote is atropine, which must be given urgently as an emergency measure. Hamblin and Marchand<sup>26</sup> recommend that 1–2 mg. (gr. 1/64–1/32) should be given immediately and repeated as necessary until the atropine effects of dry mouth and drying of the bronchi have been achieved. The atropine will also enlarge the pupil. Suction is often useful to clear the bronchial tree of

secretions. Morphine should never be given because of its depressant effect on respiration. General supportive measures should also be used. In our case we administered atropine gr. 1/100 on admission; atropine was also given by intravenous infusion (approximately gr. 1/40 over the next 24 hours). This was followed by further intramuscular injections of atropine for several days. This is a very large dose of atropine for a young child.

Acute toxic effects of parathion last for 24–48 hours and during this time a close watch must be kept on the patient. Since the lethal and non-symptomatic levels of cholinesterase depression show little difference, one must watch these patients closely.<sup>27</sup> Parathion is fairly stable and takes 120 days to hydrolyze in the open.<sup>27</sup> Consequently fruit and vegetables which have been sprayed with the insecticide are potentially dangerous, although the concentration of the insecticide on the fruit is usually too low to cause symptoms.

Regeneration of cholinesterase activity in the body depends on the amount inactivated by parathion and therefore on the rapidity with which treatment is instituted. In our case it was still only 63% of normal on the 20th day after ingestion.

#### SUMMARY

1. The statistics for cases of poisoning seen at the Transvaal Memorial Hospital over the period 1 January 1953 to 31 December 1955, are reviewed.

2. The literature is briefly discussed and reported series are compared with the cases seen at the Transvaal Memorial Hospital.

3. The Transvaal Memorial Hospital statistics are briefly compared with the statistics for the Bantu Hospitals in Johannesburg.

4. Four typical case histories are given and poisoning with potassium permanganate, ferrous sulphate and parathion is briefly discussed.

5. It is suggested that intensive propaganda in regard to the dangers of ordinary household articles and common medicaments be instituted in order to lessen the increasing rate of poisoning.

#### OPSOMMING

1. Die statistieke t.o.v. vergiftigingsgevalle wat gedurende die tydperk 1 Januarie 1953 tot 31 Desember 1955 by die Transvaalse Gedenktekenhospitaal waargeneem is, word in oënskou geneem.

2. Die literatuur word kortliks bespreek, en die reekse waaroor verslag gedoen is, word vergelyk met die gevalle wat by die Transvaalse Gedenktekenhospitaal waargeneem is.

3. Die statistieke van die Transvaalse Gedenkteken

hospitaal word kortliks vergelyk met die statistieke van Bantoe-hospitale in Johannesburg.

4. Die geskiedenis van 4 tipiese gevalle word verstrekkend en vergiftiging met kaliumpermanganaat, ferrosulfaat en parathion word kortliks bespreek.

5. Daar word aan die hand gedoen dat 'n uitgebreide propagandaveldtog in verband met die gevare van gewone huishoudelike artikels en alledaagse geneesmiddels van stapel gestuur moet word om die toenemende aantal vergiftigingsgevalle te verminder.

We should like to thank Dr. K. Mills (Medical Superintendent of the Johannesburg Group of Hospitals) for permission to record this series of cases. We should also like to thank Dr. S. Heymann, Chief Paediatrician, Transvaal Memorial Hospital, and Head of the Department of Paediatrics, Witwatersrand University, for his interest in and for permission to record Case No. 4. Cases No. 1 and 3 were under the care of Dr. J. J. Theron and Case No. 2 was under the care of Dr. S. N. Javett. We are indebted to these colleagues for permission to publish these cases. We should also like to thank Dr. H. Falcke of the Coronation Hospital and Dr. S. Wayburne of the Baragwanath Hospital for supplying the statistics from these Hospitals.

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## REVIEWS OF BOOKS

## GASTRO-INTESTINAL RADIOLOGY IN INFANCY

*Radiology of the Alimentary Tract in Infancy.*  
By Roy Astley, M.B., M.R.C.S., D.M.R. (1956).  
pp. 287 + viii. Profusely illustrated. 50s.).  
London: Edward Arnold (Publishers) Ltd.

This is not a textbook, and it is written in the readable style of a monograph. It deals comprehensively and authoritatively with a subject of which the author has wide experience so that the radiologist will be able to refer his colleagues to it for support of conclusions that previously were often based on personal records and impressions. Dr. Astley has made a distinct contribution to radiology.

Every radiologist whose practice includes much paediatrics will appreciate the tremendous amount of personal experience and observation that this book embodies. This reviewer can offer no higher praise than to say that it is the book he would like to have written, and any criticism offered is relatively unimportant.

Where there is a danger of inhalation of vomitus, barium is contra-indicated, and this contra-indication is absolute where atresia of the oesophagus is suspected. Dr. Astley advises iodized oil instead of barium, but the aqueous contrast medium, Dionosil, is probably preferable. In suspected duodenal obstruction he uses barium with caution when a diagnosis cannot be made on the control radiographs, but he does not mention the injection of air into the stomach through a soft catheter (Ladd and Gross) as a step that may obviate the need for barium altogether.

Pharyngeal and oesophageal inco-ordination, and hypo-activity of the oesophagus, have until now been diagnosed frequently but without confidence. Dr. Astley's observations provide criteria for establishing these diagnoses authoritatively.

It is disappointing to find that definite signs for the differentiation between normal and abnormal gastro-oesophageal regurgitation and a small hiatus hernia have still not been established, and the need for a full stomach in this examination does not receive due emphasis. The single criterion given for distinguishing a small hiatus hernia from a phrenic ampulla is unacceptable. In spite of this the subjects of regurgitation, oesophagitis, stricture and hiatus hernia are well covered from a practical standpoint. This practical approach characterizes the whole book. It occasionally leads to unsubstantiated claims, e.g. clumping of barium (of the mucus-resisting type) in the stomach indicates a gastritis.

A small point, but one worthy of general consideration, is that of terminology and radiological jargon. The typical radiological language of the case descriptions could be given in simpler English and made shorter. The author several times mentions oblique position (in relation to the screen). This parenthetical qualification should be unnecessary as radiographic positions are defined, but where clarification is required for the general reader it should perhaps be provided in a glossary. It would be salutary to compile a dictionary of radiological jargon.

On the whole the radiographic reproductions illustrate adequately what they are meant to illus-

trate. This contributes greatly to the value of the book.

This volume has been prepared for radiologists, student radiologists, paediatricians and paediatric surgeons. It is one for which they have been waiting and it should find a place in their personal libraries. It is an excellent, instructive and readable book which will frequently be used for reference.

## DISPOSAL OF ORGANIC WASTES

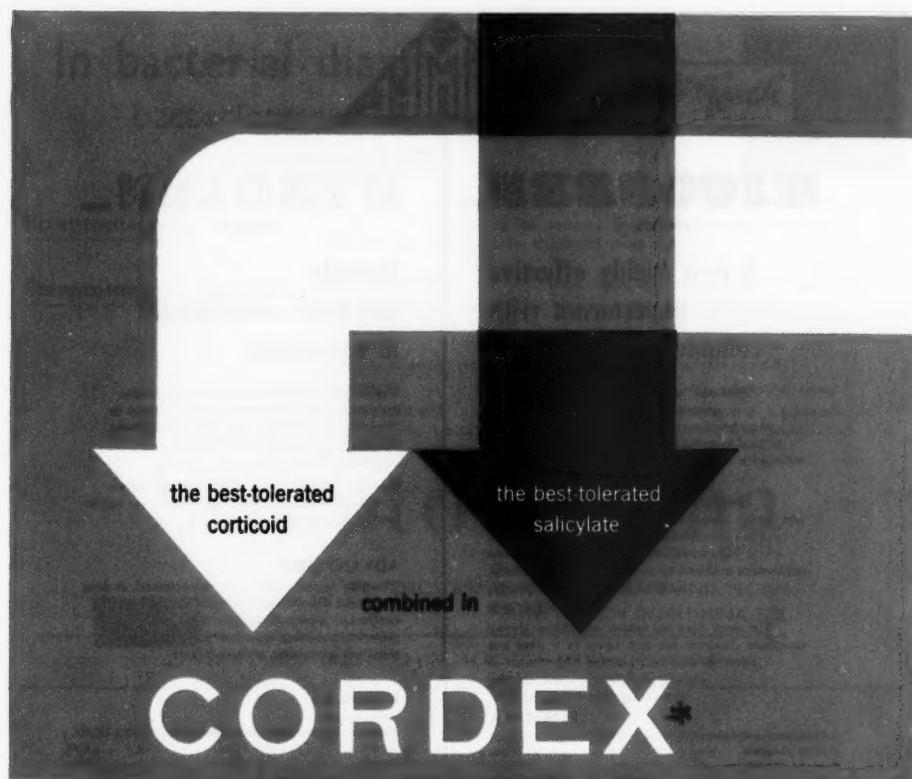
*Composting: Sanitary Disposal and Reclamation of Organic Wastes.* By Harold B. Gotaas. Geneva, 1956 (World Health Organization: Monograph Series, No. 31), 205 pages, 49 figures. £1 5s. Geneva: Palais des Nations.

'Throughout most of the period of the recorded history of man some association between disease and man's waste products has been thought to exist. Since man began to plant in order to harvest needed foods, he has also associated these waste products with the fertility of the soil and the harvest.' These opening words of Dr. Gotaas's book show that the sanitary and agricultural importance of organic wastes is no new discovery; yet, as the author goes on to say, 'it is only a little more than a century since basic knowledge and a true understanding of the processes involved began to be acquired'.

While much has been written about the fertilizing value of organic wastes, few publications have at the same time dealt thoroughly with the question of the danger to public health inherent in the disposal of wastes on to the land. This book, emphasizing as it does the principles underlying the safe disposal of community wastes and relating them to the factors governing the recovery of nutrients from the soil, therefore meets a very real need. All concerned with the problems of disposal and reclamation—small farmer and municipal authority alike—will find it an instructive and practical guide.

After describing briefly the processes involved in the decomposition of organic matter and summarizing the public health and economic aspects of composting, the author reviews the historical development of composting methods, from the earliest simple techniques up to the most modern mechanized processes. A short chapter on the analysis of various types of wastes comes next, followed in its turn by a long and detailed discussion of the many factors affecting the production of good compost. The author then proceeds to describe in detail the methods of composting recommended for large towns, for villages and for individual farms, illustrating his descriptions liberally with diagrams and photographs.

Dr. Gotaas concludes his comprehensive book with an interesting chapter on the recovery of methane from the digestion of manure and night-soil. Here, after discussing the development and usefulness of methane plants, he gives details of the design and operation of some simple installations suitable for farms and villages.



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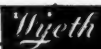
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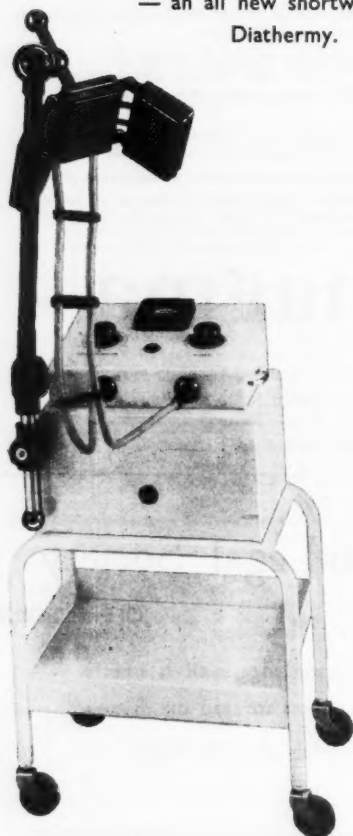
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University of Witwatersrand and General Hospital,  
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2 Myocardial Death, Injury and Ischaemia.  
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## ANTIBIOTIC ACTIVITY AGAINST COMMON HUMAN PATHOGENS

Organisms	Disease	Terra- mycin*	Com- biotic*	Penicil- lin inclu- ding Pro- napan*	Strepto- mycin Dihydro- Strepto- mycin
<b>GRAM-POSITIVE BACTERIA</b>					
<i>Micrococcus pyogenes</i> , var. <i>aureus</i> and var. <i>albus</i> (staphylococci)	Boils, abscesses, furuncles, wound infections, uri- nary tract infections, septicemia, meningitis, osteomyelitis, etc.	●	●	●	
<i>Streptococcus hemolyticus</i> (beta hemoly- tic, Lancefield groups A, B, C, D) and <i>viridans</i> (alpha hemolytic, incl. strep. salivarius, etc.)	Septicemia, tonsillitis, septic sore throat, scarlet fever, erysipelas, endocarditis, meningitis, etc.	●	●	●	
<i>Pneumococcus</i>	Acute lobar pneumonia, septicemia, meningitis, etc.	●		●	
<i>Clostridia</i>	Gas gangrene, tetanus, etc.	●		●	
<i>Bacillus anthracis</i>	Anthrax	●	●	●	
<i>Mycobacterium tuberculosis</i>	Tuberculosis				●
<b>GRAM-NEGATIVE BACTERIA</b>					
<i>Gonococcus</i>	Gonorrheal urethritis, epididymitis, cystitis, arthritis	●	●	●	●
<i>Meningococcus</i>	Meningitis	●		●	
<i>Escherichia coli</i>	Urinary tract infections, septicemia, etc.	●	●		●
<i>Klebsiella</i> (Friedländer's bacillus)	Friedländer's pneumonia, urinary tract infections, septicemia	●	●		●
<i>Salmonella</i> ( <i>Eberthella typhosa</i> and <i>salmonella</i> sp.)	Gastroenteritis, typhoid fever and paratyphoid fever	†	●		●
<i>Shigella</i>	Bacillary dysentery	●	●	●	●
<i>Brucella</i>	Undulant fever	●	●		●
<i>Proteus</i> (vulgaris)	Genito-urinary infections, infantile diarrhea, suppurative lesions	†	●		●
<i>Pasteurella</i>	Plague, tularemia	●	●		●
<i>Hemophilus</i> ( <i>influenzae</i> , <i>pertussis</i> <i>ducreyi</i> )	Pertussis, respiratory tract infections, meningitis, chancroid	†	●		●
<i>Donovania granulomatis</i>	Granuloma inguinale	●	●		●
<b>SPIROCHETES</b>					
<i>Treponema pallidum</i>	Syphilis	●		●	
<i>Borrelia vincenti</i>	Vincent's infection	●		●	
<b>RICKETTSIAE</b>					
<i>Rickettsia prowazeki</i>	Typhus fever (epidemic)	●			
<i>Rickettsia mooseri</i>	Typhus fever (murine)	●			
<i>Rickettsia tsutsugamushi</i>	Scrub typhus	●			
<b>VIRUSES OR VIRUS-LIKE ORGANISMS</b>					
Unidentified organism	Primary atypical pneumonia	●			
<i>Miyagawanella lymphogranulomatis</i>	Lymphogranuloma venereum	●			
<i>Chlamydozoon trachomatis</i>	Trachoma	●			
<b>PROTOZOA</b>					
<i>Endameba histolytica</i>	Amebiasis	●		§	
<b>PATHOGENIC YEASTS AND FUNGI</b>					
<i>Actinomyces</i>	Actinomycosis	●	●	●	●

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† In selected cases

‡ Except in influenzal meningitis

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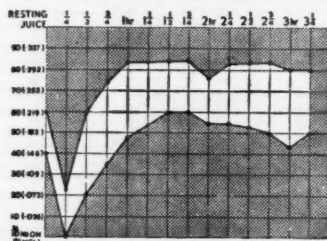
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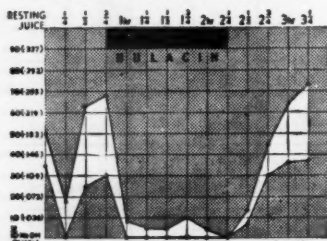
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